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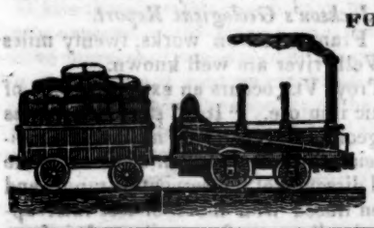
AMERICAN RAILROAD JOURNAL,

AND GENERAL ADVERTISER

FOR RAILROADS, CANALS, STEAMBOATS, MACHINERY AND MINES.



ESTABLISHED 1831.

PUBLISHED WEEKLY, AT No. 105 CHESTNUT STREET, PHILADELPHIA, AT FIVE DOLLARS PER ANNUM.

SECOND QUARTO SERIES, VOL. III., No. 29.] SATURDAY, JULY 17, 1847. [WHOLE No. 578, VOL. XX.

Correspondents will oblige us by sending in their communications by Tuesday morning at latest.

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AMERICAN RAILROAD JOURNAL.

PUBLISHED AT 105 CHESTNUT ST. PHILADELPHIA.

Saturday, July 17, 1847.

☞ We desire to express our thanks to those friends who have remembered that a Journal like ours—devoted mainly to a particular interest, and of a comparatively limited circulation—requires *prompt payment* of its subscriptions to meet its necessary expenses; and also to those who so promptly responded to our recent call; but we are under the necessity of again requesting those subscribers at a distance—with whom we can only communicate by letter, or through the Journal—to remit the amount of subscription by *mail*—at our risk—as early as convenient, and thus enable us to keep the wheels in motion.

The Rappahannock Canal.

We find, in the Fredericksburg News, the following notice of "the Rappahannock canal"—which we suppose means a canal around the falls on the Rappahannock above Fredericksburg—and we are pleased to learn that another obstruction to the navigation of our rivers is to be removed. Small means, judiciously laid out, will often accomplish great good to the agricultural community; such we hope will be the case in this instance. The editor says: "This improvement, which we believe is destined to work untold benefits to our town, is now progressing towards its completion as fast, as under the circumstances, we could expect. We visited a few days ago, the lower section, and was delighted with that portion of the work which had been partially finished. The first lock, at or near Minor's dam, is the most beautiful and durable specimen we have ever seen of that kind of workmanship. Indeed the canal, so far as we are qualified to judge, is well executed, and gives assurance that the floods may come and the rains beat against it, and it will long stand a monument to the wisdom and foresight of its projector. In a conversation with its experienced and talented engineer, we are pleased to learn that the probability is, the work will be finished by the 1st of October; thereby affording the farmer in the upper country, facilities for bringing his wheat crop to market the ensuing fall and winter."

Receipts on the Central and Pontiac Railroads.

The following receipts of principal articles over the Central and Pontiac Railroads during the month of June, are furnished by the Detroit Advertiser:

Central Railroad.

Flour	bbls.	25,692
Wheat	bush.	10,664
Wool	lbs.	117,807

Detroit and Pontiac Railroad.

Flour	bbls.	4,242	Whiskey	bbls.	79
Ashes	cks.	184	Seeds	cks.	6
Oats and corn	bu.	531	Bran and meal	cwt	7,600
Hides and skins	"	250	Saleratus	lbs.	9,429

Commerce of Milwaukee.

The arrivals and clearances at the port of Milwaukee, from April 12th to July 1st, 1847, and the number of barrels bulk of passenger's goods, and number of tons of merchandise landed were:

Steamboats, propellers, brigs, and schrs.	343
Number of passengers	10,890
Number of bbls. bulk of passenger's goods	21,476
Number of tons merchandise	2,786

Railway to China.

We find in the Railway Record, of June 5th, a suggestion for a railway through Europe to China It says that "Mr. S. B. Rodgers, of Nantyglo, has published a pamphlet on the practicability of constructing 10,000 miles of railway through Europe and Asia, and thus connecting London and Paris with Canton and our East India possessions, and all the great cities and provinces on its route. The route proposed is by Paris, Munich, Vienna, Belgrade, and Constantinople; thence through Syria, Persia, Beeloochistan, and Scinde, to Oodipoor, Calcutta, through the Berman empire, and the north part of Cochin China, to Canton."

This beats Mr. Whitney's project of a railroad to Oregon, by many thousand miles.

Splendid Car.

The Baltimore and Susquehannah railroad company, have, we understand, just placed a new passenger car on the road, of a very splendid description. The body is of a dark claret color, highly finished, and the interior is splendidly furnished with curtains of crimson cut velvet. This car has been manufactured entirely at the shops of the company, under the management of Mr. Millholland.

A Locomotive Astray.

The Springfield Gazette says that the engine designed for the passenger train from Greenfield to Springfield, on Saturday morning, having been "fired up" as usual, started off alone in consequence of some defect, while the engineer was getting his breakfast, and ran with considerable speed to South Deerfield, a distance of eleven miles, and stopped, the steam having been exhausted. The engineer started to overtake it at first on foot, but being soon distanced, procured a horse, and drove down to S. Deerfield, fired up again, and came through with the train to Springfield—40 miles—in 70 minutes, including all stops, save one at Northampton.

☞ So much for leaving a *horse* in the street, without being made fast.

Railway Stations.

In England, railway stations cost something, according to the Liverpool Journal, which says that "Mr. Brassey has taken the contract for the Chester station at £90,000."

As soon as the Newcastle and Berwick railway is opened, the whole distance between Edinburgh and London, by express trains will, says the Newcastle Journal, be accomplished in thirteen hours.

Chesapeake and Ohio Canal.

The stockholders of the Chesapeake and Ohio canal company, at a general meeting, held at the Exchange Hotel, Baltimore, recently, selected the following gentlemen for the management of the affairs of the company for the ensuing year.

President.—Col. James M. Coale.

Directors.—Dr. S. P. Smith, of Allegany county; Geo. Schley, of Washington county; W. C. Johnson, of Frederick county; J. Pickell, of Baltimore city; W. A. Bradley, Washington, D. C.; Henry Dangerfield, Alexandria, Va.

The earnings of the Harlem railroad have been for the first 14 days of July	$14,261
Same time last year	9,687
Increase	4,574

The New Jersey railroad company have declared a dividend of 3½ per cent.; the Delaware and Raraton canal and Camden and Amboy railroad co. a semi-annual dividend of 6 per ct.; the Philadelphia and Trenton railroad co. 3 per ct. for 6 months.

The Auburn and Rochester railroad company, for the purpose of providing means with which to relay their track with the heavy iron rail, have concluded to increase their capital stock.

Connecticut & Passumpsic Rivers Railroad.

We have received a pamphlet containing the following in relation to this railroad—and as little, comparatively, is known at the south and west in relation to the resources of this part of Vermont, we give it a place in the Journal.

Incorporated by the Legislature of the State of Vermont—authorized to construct a railroad from the mouth of White river in Hartford, Vt., (opposite the town of Lebanon, N. H.) following the valley of the Connecticut and Passumpsic rivers to the North Line of the State at Derby.

At the mouth of White river it forms a junction with the Northern and Vermont Central railroads.

THE ROUTE

Of the Connecticut and Passumpsic Rivers railroad for 75 or 80 miles from the mouth of White river, as will be seen by the accompanying map, is more direct than that of any other railroad of equal length in the northern or middle States. Thence north, between the town of Burke and the line of the State at Derby, three different routes have been proposed, only one of which has been surveyed. The results are favorable as shown by the map. An examination of the other proposed routes may result in a reduction of grades and an essential diminution of distance.

The valley of the Connecticut and Passumpsic rivers, north of White river, forms the natural business centre, and the outlet of one of the best agricultural districts in New England, abounding also with available water power to any desirable extent. *More than twenty business villages*, many of them of considerable importance, are located upon the immediate line of the road within the first 75 miles.

The first 40 miles, between the mouth of White river and the village of Wells river is under contract, and will be completed early in the fall of 1848. The maximum grade upon these 40 miles is 26 4 feet per mile.

This division of the road being in the most wealthy and populous portion of Connecticut river, north of Greenfield, Mass, and reaching at Wells river a central point for a widely extended district, must prove immediately productive, and will ensure the extension of the road beyond. Indeed the local business upon the line as far as St. Johnsbury, twenty miles north of Wells river, is sufficient to ensure ample profits upon the investment, ir respective of the connection with the Canadian road.

The northern portion of the route passes through an equally productive country to Canada line, where it will connect with the St. Lawrence and Atlantic railroad, leading thence to Montreal.

THE CHARTER.

The act of incorporation is liberal and ample. The capital may be increased to $3,000,000. The rates of toll may be established by the directors—"Provided, however, that the supreme court on an application, etc. may alter or establish the rates of toll for a term not exceeding ten years at any one time, *and in such a manner that said corporation shall not receive less than twelve per centum per annum.*"

AGRICULTURAL PRODUCTIONS.

The following table of agricultural products is taken from the United States census of 1840. It embraces the counties of Caledonia and Orleans in Vermont, and—for the purpose of instituting a comparison—the county of Worcester in Massachusetts. Worcester county has been selected as being very generally known, and ranking high as an agricultural district.

	Caledonia county, Vermont.	Orleans county, Vermont.	Worcester county, Mass.	Average valuation.
No. of Towns..	17	20	55	.....
Population....	21,891	13,634	95,313	.....
No. of horses...	5,852	3,462	10,657	$75 00
No. of cattle....	32,668	18,299	67,667	15 00
No. of sheep....	100,886	46,669	26,128	1 50
No of swine....	18,991	9,750	26,372	7 00
Bushels of wheat	52,109	33,315	45,759	1 25
Bushels of oats..	342,433	133,301	375,471	35
Bushels of rye..	1,799	2,400	84,914	75
Bushels of corn..	52,350	20,186	372,591	75
Bush. of potatoes	1,066,848	569,855	1,146,092	20
Pounds of wool.	183,198	107,580	70,059	35
Pounds of sugar.	665,397	507,446	00	7
Products of dairy	$215,377	$104,606	$511,073	.....
Tons of hay....	67,077	37,291	124,737	10 00

The value of these products varies in the different counties, but for the purpose of instituting a comparison, an average valuation has been assumed—and at the prices indicated, the county of Caledonia, with a population of 21,891, and an area of 700 square miles, exhibits in the aggregate a valuation of $2,045,306--equal to $93 43 for each inhabitant.

And the county of Worcester, with a population of 95,313, and an area of 1500 square miles, a valuation of $3,458,919—equal to $36 30 for each inhabitant.

It is admitted that the proportion of the whole population engaged in agricultural pursuits is less in Worcester than in Caledonia county, but in proportion to the amount produced, the number thus employed is obviously much greater.

Again—while in Worcester county the agricultural resources are pretty fully developed and no considerable increase can be expected in the articles enumerated—in Caledonia co. probably less than one-third of the arable land is yet cultivated, and no doubt, with a railroad communication to the markets, the time will soon arrive when these articles of produce will be fourfolded.

Indeed, the increase has already been very considerable since 1840, and the capabilities of the county with its present population are adequate to a still greater increase, if the means for transportation to market were such as to encourage the production of a surplus.

These remarks have been confined to Caledonia county for the sake of the comparison with a well known district in Massachusetts, but they are equally applicable to the whole region traversed by the Connecticut and Passumpsic Rivers railroad.

MINERALS.

Iron ore is found at several places along the line of the route, both in Vermont and New Hampshire. "In Piermont occurs an important bed of micaceous specular iron ore, which was examined with great care. The beds of ore vary in thickness, from a few inches to three or four feet. An analysis shows the following result. In 100 grains

Per oxide of iron	93·5 grains.
Titanic acid	3·8 "
Silica	2·7 "
	100·0

Equal to 64·8 per cent. of pure metalic iron."—*Dr. Jackson's Geological Report.*

The Franconia iron works, twenty miles from Wells river are well known.

At Troy, Vt., occurs an extensive vein of magnetic iron ore. "It is," says Mr. Adams in his geological report, "a nearly perpendicular vein which conforms in direction to the general direction of the serpentine range, and has been traced with more or less interruption for the distance of two miles. It is from three to five feet wide, and does not appear to be in danger of being exhausted in the direction of its length or depth.

In 1844, 600 tons of pig iron and castings were made at the Troy furnace, and machinery has since been erected for the manufacture of wrought iron.

Analysis—Peroxide of iron	81·20
Protoxide of iron	13·37
Titanic acid	4·10
Silica	1·33
	100·00
Metalic iron	66·62."

Lime Stone and shell marl are common in most of the towns on the Vermont side of Connecticut river, and extensive quarries of lime stone exist in Haverhill, Lisbon, Orford, Lyme and other towns on the New Hampshire side of the river. According to Dr. Jackson, the lime manufactured at Haverhill compares favorably with the Thomaston lime. An analysis of the rock shows 55·729 per cent. of pure lime.

Free Stone. "Two miles north of Oxford," says Dr. Jackson, "occurs an immense bed of compact talcose slate, which answers perfectly for *soap stone*, and is quarried to some extent, but may by proper management be made to furnish an almost unlimited quantity of that valuable material."

Copperas. In the town of Strafford, Vt., some 2000 tons of copperas have been manufactured per annum and sent to the Boston market. The quantity is to be increased the present year to 4000 tons, and the ore is inexhaustible.

Roofing Slate of good quality is found in the town of Thetford, Vt., near the line of the railroad.

STATISTICS OF FREIGHT.

Nearly accurate statistics of freight to and from market in the towns which will be tributary to the Passumpsic railroad have been obtained. These towns embrace the counties of Caledonia, Orleans, Essex, and half the county of Orange in Vermont, and the towns bordering upon Connecticut river in the counties of Grafton and Coos, N. H.

These freights, it should be noticed, have occurred while the average distance of transportation *by teams* was 80 to 100 miles.

A glance at the map will show that the amounts of freight in the different sections

embraced have not been in proportion to the population, nor do they indicate the relative productiveness of the soil. But they are in proportion to the relative proximity of the towns to railroad or water communication.

According to well established data, the amount of freights and travel upon any thoroughfare will be immediately quadrupled upon extending to it railroad facilities.

While therefore this result may be confidently expected in the present case, the prospective increase of business after the completion of the railroad must be rapid and almost unlimited, in view of the capacity of the country for agricultural productions and the immense water power along the line

	Valuation in 1846.	Population in 1840.	Tons of freight.
Nine towns in Orange county and one [Norwich] in Windsor co.	702,694 67	16,650	9,947
Caledonia county.....	830,982 83	21,891	10,047
Orleans county.....	435,839 34	13,634	5,045
Essex country.....	141,835 00	4,226	952
			25,991
Thirteen towns in New Hampshire bordering upon Connecticut river.....			11,159
Tons.....			37,150

The number of passengers in stage coaches which pass Haverhill and Newbury per year will vary little from 12,480.

The estimate of freights embraces agricultural products—merchandize, including salt, plaster, flour, etc.—copperas, lime and free stone, and manufactures except lumber.

The quantity of manufactured pine lumber ascertained to pass down the Connecticut at Newbury and Haverhill annually, is on an average 26,000 tons.

This article is greatly deteriorated by being rafted and lying so long in water as is required to reach a market—which consideration in connection with the uncertainty of the navigation of the river, the length of time required, and expense of tolls, raftsmen, etc., render it certain that all the most valuable kinds of lumber will be transported by the railroad as soon as it is completed. These statistics it will be seen have reference only to way freights along the line, to which should be added a further amount from the "Eastern Townships' of Canada which are to a considerable extent under a high state of cultivation.

But while this local business is important and will be continually increasing, it will embrace but a moiety of the business of the road when it shall have formed a connection with the Canadian railroads now projected and in course of construction.

The St. Lawrence and Atlantic railroad, extending from Montreal through the "Eastern Townships" to the line, is already under contract from Montreal to Acton, 45 miles, and the work of grading has been commenced. A portion of the iron for the track has been purchased, and this division of the road is to be completed in 1848. The construction of the remaining distance to the line will be prosecuted subsequently, coincident with the work on this side of 45°. This St. Lawrence and Atlantic railroad is authorized to construct a branch from a point below Sherbrooke to connect their railroad with the city of Quebec. Sherbrooke is 30 miles from the northern terminus of the Connecticut and Passumpsic Rivers railroad, and the point for the intersection of the Quebec branch is nearly equidistant from Quebec and Montreal—about 85 miles.

The country being nearly level, and favorable for constructions, this branch to Quebec can hardly fail of being built; especially as it will form an avenue from that city not only to the Atlantic cities, but also indirectly to Montreal by railroad.

When these works shall have been completed, it will be seen that the Connecticut and Passumpsic Rivers railroad must do an extensive *through* business to Montreal, while it will form almost a direct line for passengers from Quebec to Boston, and, in connection with the lines in the valley of Connecticut, to the city of New York.

The amount of pleasure travel from the United states via Niagara Falls and Lake Champlain to the cities of Montreal and Quebec is very considerable and is annually increasing.

When, therefore, the lines of railroad now in progress of construction shall have been completed, it is reasonable to suppose that either in going or returning, a majority of this pleasure travel will pass over the Passumpsic line.

Annual Reports of the New York Railroads.

CAYUGA AND SUSQUEHANNA RAILROAD COMPANY.

To the Honorable the SECRETARY OF STATE, *of the State of New York.*

The Cayuga and Susquehanna Railroad Company, in pursuance of the sixteenth section of the act of incorporation of said company, beg leave to report:

That since the first day of Jan., 1846, the date of their last report, to the first of January, 1847, the amount of receipts for passengers and transportation upon said road, is seventeen thousand one hundred and fifty-eight 29-100 dollars, ($17,158 29.)

The expenses incident upon carrying passengers and transporting of goods, wares and merchandize upon said road, is six thousand eight hundred and one 44-100 dollars, ($6,801 44.)

The expenses for repairs of road are five thousand five hundred and sixty-two 54-100 dolls., ($5,562 54.)

The expenses for repairs of locomotive and cars, are two thousand one hundred and ninety-three 58-100 dollars, ($2,193 58.)

All of which is respectfully submitted.

DANIEL L. BISHOP.
W. R. HUMPHREY.

ALBANY AND WEST STOCKBRIDGE RAILROAD COMPANY.

HON. N. S. BENTON, *Secretary of State.*

Sir—The directors of the Albany and West Stockbridge Railroad Company submit the following report, for the year ending December 31, 1846:

1. Length of the road in operation under the lease to the Western Railroad corporation, 38¼ miles.		
2. Cost of construction to Dec. 31, '46.		$1,777,019 57
3. No. of thro' passengers.....	76,412	
do way do	27,914¼	
4. The expenses for road repairs, including the repairs of buildings, ferry boat and docks in the city of Albany, paid by lessees.....		$17,500 62
5. No locomotives or cars of any description are owned by the comp'y.		
6. No men or horses have been employed by the company		
7. One machine shop is owned by the company, at Greenbush.		
8. The number of miles run by passenger trains of the lessees.....		57,503
9. The number of miles run by freight trains.....		102,979
10. The number of miles run by all other trains.....		15,189

11. There is no income. The lessees pay the interest on the bonds of the city of Albany, which amount to $1,000,000, as rent.

MARCUS T. REYNOLDS, *Pres't, etc.*

HUDSON AND BERKSHIRE RAILROAD.

The Hudson and Berkshire Railroad Company, pursuant to Assembly resolutions of February 2d, 1843, report as follows for the year ending December 31, 1846:

The length of said road in operation during the season 31 miles.

The original cost of constructing the whole, including outfit, and as heretofore reported.....		$575,613 00
Amount paid for the construction and purchase of cars for the year 1846, about.....		5,400 00
Income for through passengers for '46		2,859 00
do way do do		5,385 89
Total income for passengers.....		$8,237 89
Income from freight and other sources, for 1846.....		$28,805 00
Expenses of repairing and running the road for 1846.....		27,600 00
No. of thro' passengers for '46,.	2,852	
do way do do	14,796	
do miles run by all trains..	34,660	
do locomotives used by the company during the year....	4	
No. of passenger cars used by the company.....	3	
No. of freight cars used by the company.....	42	
No. of machine shops.....	1	
do horses.....	5	
do men employed by company during most of the year...	37	

All which is respectfully submitted this first day of January, 1847.

J. W. FAIRFIELD, *Pres't.*

TROY AND GREENBUSH RAILROAD COMPANY.

Hon. N. S. BENTON, *Secretary of State,*

Herewith is submitted the report of the Troy and Greenbush Railroad Association for the year 1846, pursuant to a resolution of the Assembly, passed February 2d, 1843.

The Troy and Greenbush Railroad, extending from the city of Troy to Greenbush, opposite the city of Albany, is 6 miles long.

The cost of construction to Jan. 1, '47,		$256,862 75
Received from 240,036 passengers....		31,966 60
Received from freight.....		16,023 69
Received from other sources.....		661 15
Expended for repairing and running road.....		$39,927 93
Expended on construction.....		23,491 36
Dividends.....		6,960 21
The number of locomotives is..	3	
do passenger cars, (eight wheels,).....	3	
Number of freight cars, double, (equal to single,) is.....	19	
Number of machine shops.....	1	
Average number of men pr day	40	
Number of miles run by passenger trains.....	47,873	
Number of miles run by freight trains.....	3,840	
Number of miles run by gravel and other trains.....	1,060	

H. STRATTON, *Accountant.*

NEW YORK AND ERIE RAILROAD COMPANY.

Hon. N. S. BENTON, *Secretary of State.*

Sir—The directors of the New York and Erie Railroad Company submit the following report of their proceedings, and also of their receipts and expenditures, pursuant to the 19th section of the act incorporating the company, and in compliance with the resolution of the Assembly, passed February 2d, 1843.

In the last annual report which contained a statement of the affairs of the company to the 30th of

September, 1845, it was stated that a subscription to the stock, amounting to more than three millions of dollars, as required by the act of the Legislature, passed May 14, 1845, had been procured up to Jan., 1847, the date of this report; there had been paid in instalments thereon $385,391 15, and a further instalment of ten dollars on each share had been called for. By the provisions of the acts of May 11, 1846, the active operations of the company were confined to the short section of the road between Middletown and the Shawangunk summit, until the commissioners appointed by those acts should decide upon the location between the last named point and Binghamton. The work on that section was vigorously prosecuted, and the road was opened to Otisville, 62 miles from Piermont, on the first of November last.

The decision of the commissioners in favor of the level route on the Delaware and Susquehanna rivers, was communicated to the board of directors on the 25th of August last. The work on the road from Otisville to the Delaware river was immediately commenced, and proposals for grading 130 miles from Port Jervis to Binghamton were issued, and the whole line has been put under contract, on terms considered favorable to the company. The contractors have commenced work at numerous points in this state and in Pennsylvania, and it is expected the whole line will be completed during the summer of next year. Contracts have also been made for all the iron rails required for the road as far as Binghamton.

The grading of the branch from Newburgh to Chester was commenced last spring, and the work is now in progress.

All liens upon the property of the company, except the State lien, have been discharged.

The receipts of the company from all sources, from the 30th Sept., 1845, to Jan. 1st, 1847, were	$1,160,734 68
The expenditures during the same time, on account of construction and materials, repairs and running the road, and for all other purposes, were	917,635 51
Leaving a balance unexpended, on the 1st of January, 1847, of	$243,099 17

Tabular statement relative to the New York and Erie Railroad, made to the Secretary of State, agreeably to a resolution of the Assembly, passed Feb. 2d, 1843, showing the business of the road for 1846.

Number of miles in operation, 62.	
Cost of construction (53 miles, including pier,) to January 1st, 1846	$2,084,408 25
Expended on 9 miles previous to 1846,	183,927 25
do construction in 1846	292,682 69
Total cost of construction, 62 miles, to 1st Jan., 1847	$2,561,018 56
Expenses for repairing and running the road, and ferry expenses	$123,173 97
Number of through passengers, 16,920	
do way do 86,368½	
Receipts from through passengers	$19,637 87
do way do	45,116 86
Total income from passenger	$64,754 73
Income from freight and U. S. mail	$120,761 75
No dividend has been made.	
No. of locomotives	9
do passenger cars	9
do freight cars	66
do mail and other cars	60
do machine shops	1
do horses	none.
do men (average) employed on the road	134
No. of miles run by passenger trains	58,793
No. of miles run by freight and other trains	58,974

SHEPHERD KNAPP.
THOMAS J. TOWNSEND.

NEW YORK AND HARLEM RAILROAD COMPANY.

In compliance with a resolution of the Assembly, passed February 2d, 1843, the New York and Harlem Railroad Company makes the following report:

The entire length of their road completed and in operation, is about 42 miles, extending from the City Hall in the city of New York, to New Castle, in the county of Westchester. About eight miles is a double track, and the whole road run by steam is laid with heavy H rail, from 32d street to New Castle.

In addition to this, the company has completed the grading, masonry, and bridges upon the residue of the road in Westchester county, (about 11 miles,) upon part of which the superstructure and iron has been already placed, and the residue will be completed, and the whole road through Westchester put in operation as soon as the opening of the spring will permit the company to resume the laying of the track. The expenses of the extension of the road from White Plains to the Putnam line, already amounts to upwards of $480,000, and when completed are estimated at $570,000, the vouchers for which will be rendered to the comptroller in May next, pursuant to the act of the 11th of May, 1846.

Number of miles of road in operation, about 42.		
Cost of construction of road from the City Hall to south side of Harlem river bridge, 8 miles, per mile	$104,375 00	
From south side of Harlem river bridge to Williams' bridge, including bridge, 6 m., per mile	38,475 00	
From Williams' bridge to White Plains, 13 miles, per mile	11,277 00	
For a portion of the road graded under former contract, and not used, pr m.	1,384 00	
From White Plains to Putnam line, 25 miles 82-100, present cost, per mile,	19,200 00	
Total expenses of constructing the road from the City Hall to Putnam county, 52 82-100 miles		$1,702,077 88
Expense of running and repairing the road for 1846		$88,737 47
Total income from passengers		$170,923 44
do do freight		11,882 27
		$182,805 71
Number of passengers through		58,466
Number of way passengers no account kept, but estimated at		1,450,000
Dividends none.		
Number of engines	8	
do train cars	21	
do city cars	21	
do freight cars	21	
do baggage cars	5	
do machine shops	1	
do horses	152	
do men daily employed	150	

Number of miles run by passenger and freight trains, no account kept.

JOHN H. DYKERS, *Pres't.*

Railway Accidents.

We copy an account of a serious accident which occurred on the London and Northwestern railway, near Wolverton, on the 5th of June. This appears to be one of those extraordinary accidents against which human foresight and care cannot always guard—and as it is of the utmost importance that renewed and constant vigilance should be exercised by all persons *employed* upon, as well as having *charge of*, railroads, we give the editorial remarks of several of the English railway journals, in the hopes that useful hints may be derived from them, and prove beneficial to our readers.

"*London and Northwestern Railway.*—On Saturday night a fatal accident took place on the London and Northwestern railway, near Wolverton station, involving serious damage to property, the loss of seven lives, and injury to other passengers. The down mail train for Liverpool, consisting of nineteen carriages, started at a quarter before 9 o'clock on Saturday evening from the Euston square terminus, and was due at Wolverton at 15 minutes before 11. The train was heard approaching the Wolverton station at the proper time, and the signal, indicating that all was right for the train to enter the station was hoisted, but, to the astonishment of the officers at the station, the train turned off into a siding, instead of coming down the main line, and in an instant after a fearful crash was heard. On the superintendent of the Wolverton station reaching the spot, a shocking scene presented itself. The mail train had entered the siding commencing near the bridge, usually appropriated to coal and merchandize wagons, and had come into collision with five or six wagons laden with coal. The fifth and sixth carriages of the mail train were literally smashed to pieces, and were strewed about the line, together with the passengers, while, singular to relate, the engine and tender, and all the carriages in front of them, which consisted of the Liverpool and Manchester parcels' vans, and two second class carriages, were almost uninjured. Seven persons who were in the sixth second class carriage were found either dead or dying, scarcely half an hour having elapsed from the time of the occurrence before they had all ceased to exist. Body after body was removed from the line to one of the anti-rooms of the Wolverton station, where they were at once seen by Mr. Rogers, surgeon, of Wolverton, in the employ of the company, and by two other medial gentlemen, who happened to be in the train at the time of the collision. From some cause, yet to be explained, the signal man appears to have gone to the points, a distance of forty or fifty paces, and to have turned the train into the siding. This error was not discovered by the engine driver until he had passed the points a considerable distance. Upon seeing the danger, he instantly applied the breaks, turned off his steam, and reversed his engine, and then both he and the fireman jumped off onto the embankment, and thus in all probability saved their lives. The train was at this moment going, it is stated, at a rate not exceeding ten miles an hour. The only explanation afforded by the signal man was, that he afterwards thought it was not the mail train but a luggage train, and he acted as he did for the purpose of securing its safety. This statement, however, being very much doubted, the superintendent of the Wolverton station felt it his duty immediately to give him into custody. From cards and other evidence discovered on the persons of the deceased parties, their names are supposed to be as follows:—Mr. J. B. Rattray, belonging to an iron foundry at Dundee; Mr. Miller, secretary of a London ragged school; Mr. James Clifton, supposed to be from Coventry; Mr. T. Mackinson, a collegan of Cambridge; Mr. T. Skerratt, and Mr. Cooper, not known where belonging to. The seventh is the body of a respectably attired young man, who had nothing upon him to lead to identity. The bodies were removed to an outhouse at the Wolverton station, where they now lie awaiting a coroner's inquest. In a collision attended with so fearful a loss of life it might be expected that many passengers would be injured, but the official report states that this is not the case. One gentleman had a rib injured, and two others were much shaken;—but with these exceptions the other passen-

gers were not seriously hurt. The guards of the train had a most miraculous escape. The chief guard, Haines, was actually sitting on the carriage that was destroyed, and on seeing that a collision was inevitable, threw himself, at all risk, off the top, down the embankment, and escaped unhurt. The second guard also followed his example and was uninjured. On Monday, an inquest was held on the deceased, and afterwards adjourned to Friday, when our reporter attended, but the evidence adduced yesterday has not thrown any new light upon the cause of the catastrophe. The train had the proper signal lamps, and was only two minutes before time. A white light was seen by the driver at the signal post, signifying that all was right, and immediately after, in consequence of the points having been shifted, the train rushed with a jerk into the siding. It is not true, as reported, that the driver and stoker threw themselves off the engine. They stood at their posts, at the imminent danger of their lives, up to the moment of the collision; and Mr. M'Connell, the locomotive superintendent, stated, that the courage and good conduct displayed by them and the guards would be strongly marked with approbation. Nothing has arisen to account for the extraordinary conduct of Fossey in shifting the points. As to his plea, that he mistook the train for a goods train, evidence was given that a goods train and a mail train never arrive at that station within half an hour of one another. At six o'clock, the coroner having intimated that the inquiry must be carried over to another day, our reporter left."

Herapath says, "Misfortunes," they say, "never come singly;" and so one would conclude, if we look at railway accidents. In the fall of 1841 the accidents poured in, one on the heels of another, with fearful rapidity. In the following year, about the same time, they did the same, and so they have at other periods. We have now a lamintable illustration of the trite truth of the old adage, in the fall of the Shrewsbury and Chester bridge, the running off of the Brighton engine, and in the dreadful accident of Saturday night, given in another column, on the London and Birmingham. In the last, seven lives have been lost by the wilfulness or madness of one man. It is useless to mince the matter; we can give it no other name than madness or wicked design. A man knows of a particular train coming, he sees it; for it was not dark—there is no real darkness at this time of the year; and he signals it as the train he expected, and yet he goes and turns the switches for a train of another description! However charitable we may be disposed, it is impossible to contemplate the matter, without coming to the conclusion that it was the effect of wilfulness or insanity.

The misfortune of this lamintable affair is that there is no guarding against it. Discretion, prudence and care on the part of directors, are all set at defiance by such conduct, and there is no way of dealing with it for the sake of the public, but as a proceeding of wanton wilfulness on the part of the switchman. Had it been an accident from not doing his duty, we might find some extenuation in our mind, by imagining that the man had for the moment forgotten one part of it. But, no; he hears the train, he sees it, he signals it as the true train; and, instead of resting satisfied with that, which was his whole duty, and would have been all right, he goes and does more than was required, and directly contrary to what he had heard, saw, believed and communicated to others. It might be considered harsh to say, that it was wilfully done; but the only other explanation is positive madness, and against that rises up his having seen and signalled truly. We regret it much; but the safety of the public would lead us to take up the stronger feeling against this man, and to demand a corresponding punishment. If such matters are dealt with lightly, we have no security for the public. There are cases in which lenity is crime, we and verily believe it would be so here. We should not look at the individual, but the millions that are constantly travelling about on railways at the mercy of such men. Are their lives to be set at naught, and the multiple of millions more depending on them for support; there is an instance in this very accident of 500 men with their wives and families, amounting probably to 3,000, being thrown out of bread by the death of one of the unfortunate victims of Fossey's conduct! It is dreadful to think of the amount of mischief that one man may be the cause of over and above the immediate victims.

We have heard, but on no good authority, that the company have taken on themselves the expenses of the several funerals. They will no doubt do all they can to alleviate the misery that has been caused."

The editor of the Railway Record says—"The public mind has not yet overcome the astonishment and alarm caused by the terrible accident of Saturday night last. Those who have had the best opportunities of observing the detail management of the London and Northwestern company's lines, and comparing it with the system pursued in other great railway establishments, have so generally accorded the palm of superiority to the concern presided over by Mr. Glyn, that the mention of an accident, be the causes what they may, excites a much greater sensation than could be occasioned by a casualty on a line whose *prestige* for safety and careful superintendence was less confirmed.

The misfortune has certainly been a tremendous one; and its alarming character is not mitigated by the fact that (so far as appears from what has transpired up to the time at which we write) no human foresight could have adopted any plan for the certain and effectual prevention of such accidents. Whatever was the nature of the mistake or delusion under which the man Fossey acted, that mistake bespoke in itself, so utter a perversion of the faculty of rational distinction, that it is impossible to conceive any set of regulations that could secure the traveller from the effects of such insanity.

It is the inalienable condition of every description of extensive commercial operation, that its movements must depend, in various stages, on the prudence and steadiness of an individual. The accommodation given to the public by the introduction of the locomotive engine, is, very essentially, a commercial transaction; quite as much so as was, in former days, the agreement between the passenger and stage coach proprietor, whereby the latter bargained to convey the former, for a given sum, between Birmingham and London. A drunken or careless coachman might, at any time have caused the death of every one committed to his charge. A mere twitch of the bridle—the turning of a horse's head out of the direct line of road—would have been sufficient to plunge the whole equipage down a precipice of frightful depth and to consign all to a sudden and dreadful death.

The contingency of this danger attended all coach travelling, and every passenger was necessarily subject to it. If a coachman had been seized with madness—if a driver of steady character had indulged in a stealthy fit of drinking, and, under the influence of that drink, had caused any such calamity as we have supposed—no one would have thought of making either the system of coach travelling, or the proprietors of stagecoaches blameworthy or responsible for the consequences. All that would have been uttered, would have been exhortation to the greatest care in the selection of the servants to whom such important duties were entrusted; and if satisfaction were afforded that reasonable pains had been exercised in this regard, it would have been universally acknowledged that everything had been done which the public safety and interest could require.

Now, a railway casualty should be judged by the same rule of consideration for the natural sequence of cause and effect. It will then be seen at once how unfair and unreasonable is the outcry that lays the blame of every accident at the door of some alleged negligence on the part of Managements. Examine the circumstances of the disaster of Saturday last. The train was proceeding regularly to its destination, when a policeman, named Fossey, actually altered the points of the siding from their proper position, in order to turn the carriages into it. No motive can be conceived that could have impelled the man to this act; it was an act which no one could expect or anticipate: it could no more have been provided against than could the murder of Mr. Perceval by Bellingham, or that of Mr. Drummond, four or five years ago, by the lunatic M'Naghten. It was one of those exceptional and isolated instances of infatuation for which we must always take the chances, and comfort ourselves with reflections on the infrequency of such evil developing itself. As Mr. Hudson observed very pertinently, a few evenings ago, in the house of commons, it would be well if the gentlemen who indulge in severe comments on such disasters would themselves favor the world with tangible suggestions as to the 'preventive' measures they call for. The truth is, that they cannot. To preclude the chance of such calamities, they must first contrive some prescription for making human

nature perfect; or must, at least, devise some mode whereby railway directors shall be enabled, by intuitive knowledge, to read the secret workings and impulses of the mind.

Our belief and conviction are, that the London and Northwestern company are as desirous as any party, parliamentary or otherwise, that every point bearing on the causes of the accident be cleared up. It is the interest of the company that this should be done, if they have fulfilled their duty and engagement to the country, viz: of taking due preliminary care with regard to the character of all the servants employed by them. This is the point whereon the question as to their conduct must revolve; and, as to this, we must await the issue of the inquiry.

This is the position of the London and Northwestern direction, in so far as relates to its accountability for the recent deplorable catastrophe. But we cannot too strongly insist on the importance of taking every available step for lessening the probability of such misfortunes. It is not to be forgotten that, however complete may be the power of a railway company to clear itself from the random charges which ignorance and malice are always ready to bring forward, the mere occurrence of frequent accidents is a circumstance tending in itself to create a public prejudice, which may operate very deleteriously to the railway interest.

The condition of the 'working establishment' on the London and Northwestern lines has long been subject of admiration to travellers; and we have reason to believe that there is no company less sparing of expense, for the purpose of maintaining a high state of efficiency in this department. But we entreat the management, and all those whom it favors with its confidence, to carry with them the fact, that the quality of the human agents is a point of even greater importance than that of the carriages, engines and rails. The finest 'stock' in the world will be worked with disgrace and disaster, where the servants are not endowed with prudence, experience and sobriety. Let every thing, then, be done to encourage steady and intelligent men—to retain those of proved experience and good conduct, and prevent them from seeking service with other establishments, through the disgust that ever springs from anything like favoritism or personal preference. There is no company more entirely in possession of the means for securing to itself the highest class of ability in all branches of its business—no company can better afford to reward faithful services, and to give its *employees* the most effectual stimulous—that of a feeling of personal and permanent interest—to the scrupulously diligent discharge of their respective duties. If, by such wise and really economic liberality, the occurrence of fatal accidents cannot be altogether precluded, the satisfactory position will at least have been attained that everything in the power of man has been done towards promoting the safety of passengers, and excluding even a pretext for the nonsensical and calumnious rigmaroles of the Sibthorps, and the Morrisons, and their 'kindred spirits.'"

Patent Law.

Extract from the last report of the Hon. Edmund Burke, Commissioner of Patents. It is a plain spoken document, and deserving of consideration by those who make use of the inventions of ingenious men without giving a fair consideration.

"In my last annual report I had the honor to submit to Congress a proposition for certain modifications of the existing patent law, which I deemed important and necessary for the protection of the inventor, as well as the public. A bill, embodying most of the modifications suggested, was reported in each House, by the committee having the matter in charge; but in consequence of the great amount of business pressing upon Congress at the last session, it failed to become a law.

"The bill provided for two important and essential changes in the existing law in relation to patents. One of those provisions was, that all suits brought by the patentee for infringements of his invention should be received by the courts trying the same, as conclusive evidence of his right to recover damages, until they were set aside by the institution and prosecution to final judgment of a process for their repeal. The other was a provision for the institution of a process for the repeal of letters patent which had been obtained by fraud, misrepresentation, or upon false suggestion, or which were void, in whole or in part, for want of novelty, or other cause. The very inadequate protection afforded to the patentee by the present law, seems to me to furnish sufficient reason for the proposed modification.

"After the rigorous and searching ordeal through which every invention passes at the Patent Office, it certainly seems reasonable that the letters patent, under the seal of one of the officers of the government of the United States, should be received in courts of justice as conclusive evidence of the title of the patentee to his invention and his right to recover, until his patent shall have been revoked and annulled for good and sufficient cause, by a tribunal competent to investigate the matter.

"But the present law extends no such protection to the patentee. At present his letters patent are only *presumptive* evidence of the novelty of his invention, and of his right to recover. Consequently, the validity of his patent may be, and for the purpose of embarrassment often is, put in issue in suits for infringement, and he is compelled to prove the novelty of his invention, over and over again, as often as the depredator upon his rights, whom he seeks to punish, is disposed to put him to that trouble.

Many instances of this wanton aggression upon the rights of the meritorious inventor have come to the knowledge of the undersigned since he has had the honor to be at the head of the Patent Office. And many of these instances of aggression proceed from wealthy and powerful companies and corporations, and the subjects of them are the inventors of the most useful and valuable machines and improvements. The more valuable the invention, the more liable it is to piracy and infringement. These wealthy and powerful bodies know well the benefit to them of the law's delay, and its ruinous expense to the single handed individual who dares to resist their unlawful and unjust invasion of his rights; and hence, in the end, they hope to win, either by the defeat of the patentee by means of some trifling defect in his title deed, or his inability to procure the necessary evidence to substantiate his right, or by a compromise, in which he will be forced to sacrifice a portion of his claims in order to relieve himself from the embarrassment and expense of the unequal contest.

"As the law now stands, the great burden of the controversy falls upon the patentee, and not upon the wanton violator of his rights, as it should.

"In this view of the matter I think all candid men will agree that when a patentee has established, in the judgment of the office or tribunal whose duty it is to pass upon his claims in the first instance, a right to letters patent of the United States, that document should be his shield and protection, until it is shown by others, who dispute his title, that he has no right to it.

"I am aware that there is a prejudice existing in the minds of a portion of the community (small, I believe it is) against the claims of inventors. It is contended by some, that patents, securing exclusive rights to the discoverers of new machines or processes of manufacture, are monopolies, operating to the detriment of the best interests of the community, and existing against the true policy of all just governments; and therefore are to be regarded with suspicion, construed with great strictness, and defeated if possible.

"I am fully persuaded that, on a little reflection, such a view of the rights of inventors will disappear from the minds of candid and reasonable men. What are the grounds on which all civilized and enlightened governments grant to persons making valuable discoveries in the arts and manufactures a limited monopoly of the benefits of their inventions? The main ground is to encourage discovery and invention—those great agents of social improvement—by securing to those who make them the profits which result from them, in order to enable them to remunerate themselves for their toils and expenditures, and to induce others to explore the vast and limitless field of invention.

"Every new discovery in science and art contributes to the wealth, convenience and comfort of individuals, and to the improvement of society. Some of the inventions of the last few centuries have burst upon the world with the brilliancy of the morning sun—changing the whole aspect of society, and conferring incalculable benefits upon the human race. I need only mention the art of printing, the discovery of gunpowder, the steam engine, the cotton gin, the spinning jenny, the power loom, the steamboat, the railroad, and the magnetic telegraph. These great discoveries in science and art have revolutionized the condition of the civilized world, and their influence at this moment is probably more potent and more sensibly felt than ever before.

"I mention these great discoveries as striking instances of the effect of the labors of the inventer upon society and civilization. There are others of less note, producing their due influence upon the condition and welfare of the world. Even the most humble discovery contributes its due proportion to relieve the human family of its burdens, and administer to its comforts, and to accelarate and aggrandize its unceasing triumphant progress in the improvement of its condition, and the expansion and perfection of its lofty nature and destiny.

"Therefore, there is ample reason why society should reward and encourage that class of its benefactors whose claims I am now considering, by securing to them, for a limited term, the exclusive enjoyment of the fruits of their genius and labors.

"But it cannot be denied that, upon the principles of abstract justice, the inventor has a complete and unquestionable claim to the fruits of his discoveries, until his labors and sacrifices are adequately remunerated.

"Many valuable and profitable discoveries in the arts are the result of a sudden and lucky conception in a happy moment; but most of them are the fruits of days and years of incessant toil, anxious and harassing thought, and great pecuniary sacrifices. This toil, this mental effort, and these pecuniary sacrifices, establish a title to the product which is their offspring, as sacred and irrefragable in the eye of justice as the title to his farm, his workshop, or his merchandise, which a man has acquired by his labor, skill and economy. So clear and convincing is the view of the right of the inventor to the fruits of his genius and labor, that argument in its support would seem to take from its strength. Yet the reasons are equally strong, that the inventor's exclusive enjoyment of his discoveries should not be perpetual, but should be permitted only for a limited period.

"All inventions, great and small, generally have their period of birth, growth, maturity, and perfection, if the latter term be allowable. And if one mind conceives and gives birth to the first idea, many assist in its development and expansion. Probably no piece of mechanism was ever made which was perfect in all its parts at its first creation. The steam engine is an interesting and beautiful illustration of the gradual progress of an invention, from its first conception in the mind of the inventor to its present wonderful state of perfection and efficiency. It first appeared in a rude form, unwieldy and dangerous to those who dared to operate it—a thing designed more for experiment than utility; and now, after passing through nearly two centuries of improvement, and taxing the highest intellectual energies of thousands of ingenious and skilful men, it appears to us with a perfection, in the nice and delicate adjustment of its machinery, which astonishes and delights us, and an efficiency and power of action which enable it to confer the greatest and most lasting benefits upon mankind.

"The history of this wonderful engine and instrument of civilization shows as clearly and conclusively that the claims of the inventor to the fruits of his genius should not be perpetual, as it does that he should be permitted to enjoy them until he is adequately remunerated for his labor and expenditures; for if his right to his invention were perpetual and exclusive, no other person could improve it, because he could not use his improvement with the original invention, and therefore not at all. This would immeasurably retard, if not wholly prevent all improvement of original inventions, and would result in incalculable injury and mischief to society.

"Hence, while admitting the unquestionable justice of the claim of the inventor to the fruits of his genius for a period of time sufficient to enable him to remunerate himself adequately for his toils and expenses, it is absolutely necessary, for the progress of improvement and the welfare of society, that his exclusive right should then cease, and his invention become the common property of the public. Others will then have an opportunity to remedy the defects of, and to improve and perfect his original creations.

"And, in accordance with his view of the subject, the Constitution of the United States authorizes Congress to enact laws for the promotion of useful arts and the protection of the inventor in the enjoyment of the fruits of his genius and skill for a certain period, the duration of which is limited to fonrteen years; at the end of which time, in consideration of such protection, his invention, and the secret of it, shall become the property of the public.

"I have been thus particular in setting forth the general principles of the patent law, because, as before remarked, a prejudice prevails to some extent in the community against the justice of the claims of the inventor to temporary protection in the enjoyment of the fruits of his labors. I am, however, happy to see that juster sentiments are growing more prevalent in relation to the rights of that valuable and meritorions class of citizens. During the past year courts of justice have displayed a more earnest desire to give protection to the inventor, as evinced by the liberal construction which they have given to the present imperfect patent law, whenever questions relating to patents have come before them for adjudication."

From the American Mining Journal.

Improvement in Treating Metallic Ores.

In the last number of the Journal and Gazette we gave an account of the recently patented method of smelting ores by electricity. We now give a specification of a patent granted a year or two since by the British Government to Mr. Frederick Bankhart, of Champion Park, Denmark Hill, in the County of Surrey, "for certain improvements in treating certain metallic ores, and refining the products therefrom." The invention relates to all ores containing copper, whether combined with sulphur or not; and consists in adjusting and mixing together the different ores which contain sulphur in other ores so adjusted and mixed, to successive roastings and lixiviations, whereby a solution of sulphate of copper is obtained, from which the copper may be precipitated in a refined metallic state.

The method of carrying out this invention is as follows.—the copper ore is first reduced to powder, and the relative proportions of sulphur and copper which it contains are ascertained by analysis; then if the sulphur bears a less proportion to the copper than one to two, iron pyrites or copper pyrites, also pulverized, or added, in such quantities as will bring it to that proportion. If two or more descriptions of copper ores are to be treated, they must be mixed together in such proportions as will make the sulphur of the mixture bear to the copper at least the proportion of one to two; iron pyrites or copper pyrites being added, where necessary, to insure that proportion of sulphur. And there must always be a sufficient quantity of sulphur ores for the conversion of the copper into a soluble sulphate, and also to allow for the escape of part of the sulphur during the processes. The copper ore, prepared in this manner, is then submitted to such a degree of heat, in free contact with atmospheric air, as will oxidize the metals not already in a state of exide, and convert the sulphur into sulphuric acid. For this purpose, a common reverberatory furnace is used, and the ore submitted to a dull red heat, in free contact with the air, until the mixture attains a state of seeming fluidity, and it is retained in that state until the evolution of sulphurous vapor nearly ceases: the whole of the mixture is not put into the furnace at once; but it is divided into several portions, and one portion being put into the furnace, another is added, when the first has attained a dull red heat, and so on until the whole has been introduced:—the mixture is frequently stirred during the process. The evolution of sulphurous vapor having ceased, or nearly so, the mixture is removed from the furnace to a vat or pit, and water (or a weak sulphate liquor from a previous lixiviation) applied at about the boiling temperature, and retained at that temperature for some time, by means of injected steam, to insure the solution of the sulphate of copper. When the sulphate of copper liquor is drawn off from the residual mixture, the latter is mixed with as much iron pyrites or copper pyrites as will supply the requisite proportion of sulphur; the whole is then subjected to a second roasting, and to a second lixiviation: this process of adjusting the proportion of sulphur in the mixture, and roasting and lixiviating, is repeated until the whole of the copper is obtained from the ore.

The next process is to precipitate the copper from its sulphate solution; after which it is to be fused, and run into moulds; it is then ready for sale as fine metallic copper. Various modes of precipitation may be adopted; but the patentee prefers to employ cast or wrought iron plates, keeping the solution at a temperature of from 120 to 150 degrees Fahr., and as nearly as may be of the same strength, by means of a circulating stream of fresh sulphate solution, which, entering at the top, and being conducted by a pipe downwards, tends, by its greater specific gravity, to displace the lighter solution; the latter

overflowing, is to be returned into the lixiviating vat, to be recharged with sulphate of copper, and this again precipitated, until the refuse liquid becomes a nearly saturated solution of sulphate of iron, when it is set aside to crystallize.

The patentee claims, as his invention, the mixing of the different ores of copper and iron pyrites in due proportion, according to the quantity of sulphur relatively with the copper which they respectively contain, and adjusting them in such manner as that ores which hold sulphur in excess may compensate others which are wholly or partially deficient in sulphur, and subjecting such mixture to a succession of roastings and lixiviations, (the residuum, after each roasting, having the proportion of copper to sulphur adjusted, as before,) and thereby obtaining a solution of sulphate of copper, whence the copper is obtained, by precipitation, in a refined metallic state.

Railway Breaks.

We find in the Railway Record for June 5th, the following account of *Crawford's Break* for railway carriages, and give it entire, with the conversation which took place at the Institution of Mechanical Engineers. Improvements in the *break* are as important as in the locomotive—as it is quite as important at certain times, to come to a stand, as it is at others, to go ahead.

At a recent meeting of the Institution of Mechanical Engineers, the following paper, on the improvement in railway carriage breaks, was read by Mr. CRAWFORD, C. E., (of Birmingham:)—The railway carriage break in common use is open to several objections, but principally on account of its being very ineffective in all cases of emergency, as when a train gets off the rails, or an axle breaks, or some obstruction is in the way, with the train going at great speed, and but a short space to stop in; under which circumstances it is desirable that a great amount of retarding force should be applied, and as promptly as possible. Another great objection arises from the break entirely checking the revolution of the wheel, and causing the periphery to wear in flat places, particularly on lines of railway having steep gradients, and which may not unreasonably be suggested as one of the causes by which a train occasionally gets off the rail, and for which no very satisfactory reason is often assigned. To overcome these objections, I propose a mechanical arrangement for accumulating power, equal to a number of men, in proportion to the carriages on which breaks are to be applied, and with a means of connecting the breaks of the several carriages together, and of distributing the retarding force or friction on each, in proportion to its weight, and by which means the breaks may be as suddenly or gradually applied, as circumstances may require their intervention. To effect which, I submit two plans—either a cylinder with a piston, acted upon by compressed air, or the ordinary atmospheric pressure against a vacuum or a series of springs placed in a frame, in connection with the machinery for communicating motion to the breaks; giving a decided preference to the latter arrangement, as the cheapest and least liable to get out of order. The connection may also be formed in two ways, either by a revolving rod running under the carriages, and fitted with a universal joint, and a socket at one end for the end of the rod on the adjoining carriage to fit into, or by means of fixed pulleys and chains placed under the floor of the carriage; but with either plan it is necessary that a spring should be attached to the lever of each break to regulate the amount of pressure to be applied, and to remedy any difference that may exist in the length of the connecting rods and friction blocks, or in any little irregularity that may take place in forming the connection between the carriages; and, if the spring be properly constructed, it is obvious that, however great may be the motive power by which the breaks are applied, no more than the requisite amount of pressure can possibly be thrown on the breaks of any particular carriage; but without the spring, unless the construction of all the parts and arrangements in connecting the several carriages together are exactly equal in every respect, (a circumstance by no means practicable,) the whole amount of pressure would probably be thrown upon one carriage, and not without great danger of fracturing some of its parts. In the adoption of any plan for suddenly applying a great amount of friction to stop the momentum of a train (as in the arrangement now open for discussion,) the application of which is only required at occasional and uncertain intervals, it is desirable that it should be constantly used to ensure its acting when fully required. I therefore propose to join the breaks of several carriages together, by either of the arrangements mentioned, and by placing the whole under the control of one guard. He would be able to use the breaks for the ordinary stopping of the train, by allowing the springs to recoil about half the length of the frame in which they are placed; or, should it be necessary, it would be in his power to throw on the whole effective force of the breaks by a simple motion of his hand. In the arrangement proposed, no alteration is made in the general plan of forcing the friction blocks against the wheels, by means of levers and rods attached to a horizontal bar placed underneath and at right angles to the length of the carriage; and, therefore, no considerable expense would be incurred in carrying out the arrangement—the addition of a spring attached to the break lever, with a series of springs for accumulating power, being all that would be required to perfect the arrangement. Should the springs accidentally become disarranged, the breaks may be applied by the hand, and those of each carriage may be separately used as the common break, whenever disconnected from the adjoining carriages. With regard to the construction of the springs, those made of a spiral form would be the best, if placed in a frame in which they could be regulated, by means of a nut and screw, to any desirable strength. As a proof of the durability of the spiral spring, I may mention that Mr. Salter, of West Bromwich, has one that has been under compression for upwards of seven years without having lost any perceptible amount of power, although loaded with a sufficient weight to force the coils of wire perfectly close. In proof of the inefficiency of the present breaks, when most required, Mr. C. then proceeded to instance several accidents which had occurred in which the want of an improved plan was obvious. Mr. Crawford then explained, by the help of models, the action of his break, which is intended to be worked either by a cylinder or piston, or by a succession of springs, connected with the ordinary break.

The CHAIRMAN said that it was perfectly practicable to attach breaks to all the carriages in a train by the ordinary plan, and to connect them by chains and rods. Supposing the plan of Mr. Crawford and Mr. Chesshire's buffer were in use together, it would then require uniformity in the carriages. At present, on the narrow gauge, they had carriages belonging to different companies in one train, and no two companies' carriages were exactly alike.

Mr. CRAWFORD saw no difficulty in that, so long as the pulleys were put on the same side of the carriages.

The CHAIRMAN thought that it would require—first, all the companies to agree in adopting this invention; and, secondly, their departing from their present course of constructing their carriages, which would be a considerable expense.

Mr. CRAWFORD said it would not be necessary to have every carriage provided with a break; five or six would be enough in a train.

The CHAIRMAN remarked, that there were generally two carriages with breaks to each train at present.

Mr. CRAWFORD considered that the expense would not be more than 4*l.* or 5*l.* above the ordinary break. It could be applied without the slightest cutting up of the carriages.

Mr. FOTHERGILL said, that a steam break had been invented some years ago, which had not been carried out in consequence of the expense.

The CHAIRMAN thought that the result to be obtained would scarcely warrant the additional expense.

Mr. COWPER remarked, that the object of Mr. Crawford was to prevent accidents. The power of pulling up short was a gain, but he thought it might be effected by having an ordinary break to every carriage.

Mr. HENDERSON did not think the invention could be applied for the sum named, but thought if it were in itself desirable, the expense was not an objection. He questioned whether the stopping the wheels would stop the train.

The CHAIRMAN considered that a complicated machine like that, any part of which being out of order would stop the whole, was less to be depended on than a simple contrivance of less power.

Mr. WARD considered that a greater power of stopping the wheels would be an advantage, and that it was desirable that one man should have the power of effecting this.

Mr. CRAWFORD explained that he did not believe the stopping of all the wheels in a train would stop the train in less than 20 or 30 yards' distance. It would probably be sufficient for the purpose to check two-thirds of the wheels. In case of the machinery breaking (which he thought might be rendered almost impossible,) the ordinary breaks of the carriages might be used.

The SECRETARY—Providing you had a man in each carriage to do it.

After some further conversation, the CHAIRMAN expressed his conviction that they could not pronounce an opinion on the invention, and that probably Mr. Crawford would be satisfied with the examination it had undergone.

That gentleman assented, and the meeting then broke up.

Great Improvement in Iron Manufacture.

A gentleman of Newark, New Jersey, as we learn from the "Daily Advertiser" of that place, has recently patented a process of melting iron ore, and producing bloomed iron, which, in the judgment of those who have witnessed and examined the process, is an improvement of the greatest importance, not only to manufacturers, but to society at large. The patentee is Mr. Alexander Dickinson, a worthy gentleman of Newark, and his improvement consists in combining with a closed forge fire, a tight chamber with an opening at the top to fill in the charge of fuel and ore.

The value and importance of this simple invention, says the Advertiser, will be readily apprehended, when we say, as we do on the most reliable authority, that it saves half the coal and half the time required by the old method, and at the same time makes a better article—and equal to the best Russia or Swedes iron. It ordinarily takes from 300 to 350 bushels of coal to make a ton of blooms; and the old forge fire will make three tons of iron per week, by working day and night, without intermission.

The plan now introduced, it has been proved by satisfactory experiment, would produce double the amount, in the same time, of a far better article, and at a saving of half the cost in fuel—which, when we take into account the total amonnt of iron manufactured in our country, would make an immense saving, besides furnishing a better quality of iron. It requires but a moment's reflection to see that this improvement is therefore a matter of national consequence and general congratulation. The use of iron is becoming every day more universal. It now enters in a great part of all the economical enterprises of society, and this simple invention, by increasing the production and lessening the cost, can scarcely fail greatly to extend the use of it—and that without dependence upon a precarious tariff.

These startling statements are satisfactorily verified by the testimony of one of the oldest and most respected iron masters in the Union, Colonel Jackson, of Morris county, and his testimony is corroborated, if corroboration be necessary, by Seth Boyden—a machinist and inventor whose opinions on these subjects have the weight and authority of demonstrations.

We find the above in Mining Journal of New York. We have before seen it noticed, but were inclined to believe that the claim was altogether too great to be correct, but shall be highly gratified to learn that it is literally correct. That important improvements will be made in this *mighty* field for American industry, skill, and capital, we have no doubt. It is only necessary to bring *mind* and *capital* to bear upon the iron business, in this country, to make us *exporters*, as we have heretofore been—and now are, importers of the article.

Railroad Items.

The several railroad companies between Albany and Buffalo are relaying the road with the heavy iron rail, as fast as iron can be procured. The Utica and Schenectady company have about three hundred men constantly employed, and will probably have the new rail all laid within twelve or fifteen months. This company is also grading an additional track by the side of the old one. The Syracuse and Utica Company have a large force employed, and will this season relay with a heavy rail the track from Rome to Utica—fifteen miles. The Auburn and Syracuse Company have commenced putting down the heavy rail, and will finish as much as possible this season. The Auburn and Rochester Company are preparing to lay the heaviest iron rail in the United States, and will probably not be behind the other roads in carrying it to a speedy completion. The Attica and Buffalo Company are preparing to lay down as much of the heavy iron as they can this season, and will complete the whole in another year. The Tonawanda Company intend to relay their track, between Batavia and Attica, with a heavy iron rail, during next summer, and to put down the heavy rail between Batavia and Rochester as soon afterwards as possible.

From present indications, the entire line from Albany to Buffalo, will be relaid with heavy iron by the fall of 1849.

The whole line of the railroad from Saratoga Springs to Whitehall, in Washington county, N. Y., at the head of Lake Champlain, is now under contract, and the work will probably be completed so as to accommodate the next year's travel, or at furthest, by the 1st of July, 1848. The road is to be of the most solid and approved construction. This will be a profitable road, without doubt. Besides the lines of packet boats on the Champlain Canal, there are now six or eight different stage coaches, in constant employment, to convey passengers to and from Saratoga, and the Champlain steamboats. A good railroad will attract still more travel to the North by way of Whitehall and the Lake. When the present awful railroad from Troy to Saratoga is relaid with a good solid T rail, it will become a favorite route to Montreal, Ogdensburgh, etc. A road is contemplated, too, from Whitehall to Rutland, or some point on the route of the Rutland road—a distance of some 20 miles—which will make a route from Whitehall to Boston that way, very little, if any longer, than by the way of Troy and Albany.

The entire track of the New Haven, Hartford, and Springfield railroad, with the exception of about four miles between Hartford and Berlin, has been relaid with heavy T rail. A difference of thirty minutes is made in the running time between Hartford and New Haven, and about one hour in the running time through. The line between New York and Boston, via New Haven, goes through in about twelve hours, and is a very delightful route, as it passes through some of the pleasantest villages of New England.

We understand that the trustees of the town of Portsmouth, Virginia, have purchased the Portsmouth and Roanoke railroad from the board of public works of that State, under the act passed at the last session of the Legislature, for the sum of $50,000, upon a credit of six years, and that they have sold the road to Messrs. Henshaw & Co., of Boston.

The new company will immediately lay down T rails from Portsmouth to Welden, and will also extend the road thirteen miles further in order to connect with the Raleigh and Gaston railroad.

The receipts of the Long Island Railroad Company are daily increasing, and the expenses decreasing. A very important reduction in the expenditures of the company is in contemplation.

The Morris and Essex Railroad Company have declared a semi-annual dividen of 3½ per cent.

A new line for Boston is about to be opened, consisting of the Worcester and the Rhode Island. These boats are to run to Providence, in opposition to the Bay State at $2 through. The result of this will probably be a break down of the fare on all the routes, and another season of unprofitable business on the Sound.

Notice is given that the interest due on the Harrisburg railroad bonds, on the 1st July, will be paid at the Girard Bank.

Railroad Commissioners.—The Governor has, we understand, appointed John Wilkinson, of Syracuse, Henry B. Gibson, of Canandaigua, and Timothy Childs, of Rochester, Commissioners to settle difficulties between the Troy and Schenectady and the Utica and Schenectady Railroad Companies, as authorized by a law passed May 7, 1847.

The Telegraph Lines.—The Albany Evening Journal refers to the two new Telegraph inventions which are about to be put in operation at the north, and the fact that merchants of New York have subscribed the stock for new lines of telegraph from New York to Boston, and from New York to Philadelphia. It says House's patent will work—but it is more complicated than Morse's. Pease's invention, however, it considers a gem—simplicity itself. A child, it adds, can catch the entire prilosophy of it at a glance. If it works well, it will prove a successful competitor for the golden glories of the system. The Journal does not complain of the courtesy nor the accuracy of the present lines, but it thinks the public convenience may be promoted by other lines; and winds up with the following very apposite remark in which

all editors will unite: "Competition is the life of business; and while it may not make lightning travel any faster, it may make it perform its astonishing functions at more moderate rates."

Telegraph under Water.—The Electric Telegraph from Portsmouth, England, to the Isle of Wight, has been found to succeed admirably, on a trial, with even only one wire laid down under water. We heard that the telegraph on the Philadelphia and Baltimore line passes under the waters of Gunpowder river, and operates also successfully.

ATLANTIC AND ST. LAWRENCE RAILroad.—Notice to Contractors.—Proposals in writing will be received at the office of the Atlantic and St. Lawrence Railroad Company, in the city of Portland, until Tuesday, the tenth day of August next, inclusive, at sunset, for the grading, masonry, and bridging of that portion of their road extending from the termination of the second division near the hotel road in Danville, to a place in the vicinity of Norway and Paris cape, a distance of about 20 miles.

Maps, profiles, and specifications will be ready for examination on and after the second day of August next, at the Engineer's office in Portland, where all necessary information will be given.

The company will require, as one of the stipulations of the contract, that the heavier work on any section, shall be first attended to, so that the heavier and lighter work may be completed at nearly the same time.

Persons unknown to the officers of the company must accompany their bids with satisfactory evidence of their ability to execute the work. In all cases good and sufficient bonds with two or more sureties will be required for the faithful performance and fulfilment of the contract.

WM. P. PREBLE, *President.*

Portland, June 30, 1847. 3t28

NOTICE TO CONTRACTORS.—SEALED Proposals will be received until Wednesday, July 15th, in the Borough of Harrisburg, and until Wednesday, July 22d, in the city of Pittsburg, at 10 o'clock A.M., at the Office of the Engineers, for the Grading and Masonry upon fifteen miles of the Pennsylvania Railroad, extending west from Harrisburg, and fifteen miles of said Railroad, extending east from Pittsburg. The grading will include very heavy work, and the amount of Masonry, including the Piers of Abutments of the Bridges across the Susquehannah, three-quarters of a mile in length, will be unusually large. Plans and specifications of the work can be seen at the Engineer's office in each place, for ten days previous to the time appointed for receiving the bids. Any further information can be had upon application to the Chief or Associate Engineers. S. V. MERRICK, *President.*

MICHIGAN CENTRAL RAILROAD.—NOTICE TO CONTRACTORS.—Proposals will be received by the Subscriber until the 1st of August next, for the Grading of that portion of the Michigan Central Railroad lying between Antwerp and New Buffalo, a distance of 60 miles.

Profiles and specifications will be ready for examination after the 15th day of July next, at the office of the subscriber, or that of Col. J. M. Berrien, at Kalamazoo, at which time the line will be shown to contractors. J. W. BROOKS, Supt.

Michigan Central Railroad Office,
6t26 Detroit, June 17, 1847.

A. & G. RALSTON & CO., NO. 4 South Front St., Philadelphia, Pa.

Have now on hand, for sale, Railroad Iron, viz:
180 tons 2½ x ½ inch Flat Punched Rails, 20 ft. long.
25 " 2½ x ½ " Flange Iron Rails.
75 " 1 x ½ " Flat Punched Bars for Drafts in Mines. A full assortment of Railroad Spikes, Boat and Ship Spikes. They are prepared to execute orders for every description of Railroad Iron and Fixtures. 1tt

PATENT RAILROAD, SHIP AND BOAT Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. York will be punctually attended to.

HENRY BURDEN, *Agent.*

Spikes are kept for sale, at Factory Prices, by I. & J. Townsend, Albany, and the principal Iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

*** Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufcturing so as to keep pace with the daily increasing demand.

ja45

MANUFACTURE OF PATENT WIRE Rope and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers etc., by JOHN A. ROEBLING, *Civil Engineer,* Pittsburgh, Pa.

These Ropes are in successful operation on the planes of the Portage Railroad in Pennsylvania, on the Public Slips, on Ferries and in Mines. The first rope put upon Plane No. 3, Portage Railrord, has now run 4 seasons, and is still in good condition. 2v19 1y

PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. JOHN F. WINSLOW, *Agent.*

Albany Iron and Nail Works, Troy, N. Y.

The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Etting, Philadelphia; Wm. E. Coffin & Co Boston. ja45

MACHINE WORKS OF ROGERS, Ketchum & Grosvenor, Patterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works being extensive and the number of hands employed beinglarge, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work.

Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery

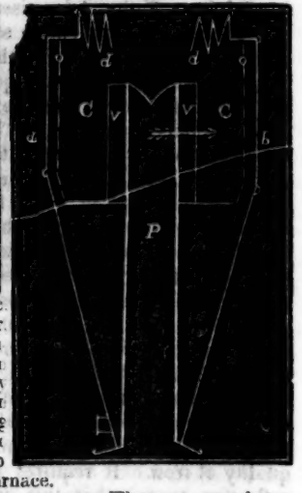
of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
a45 Paterson, N. J., or 60 Wall street, N. York.

FRENCH AND BAIRD'S PATENT SPARK ARRESTER.

TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved Spark-Arrester recently patented by the undersigned.



Our improved Spark Arresters have been extensively used during the last year on both passenger & freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits:

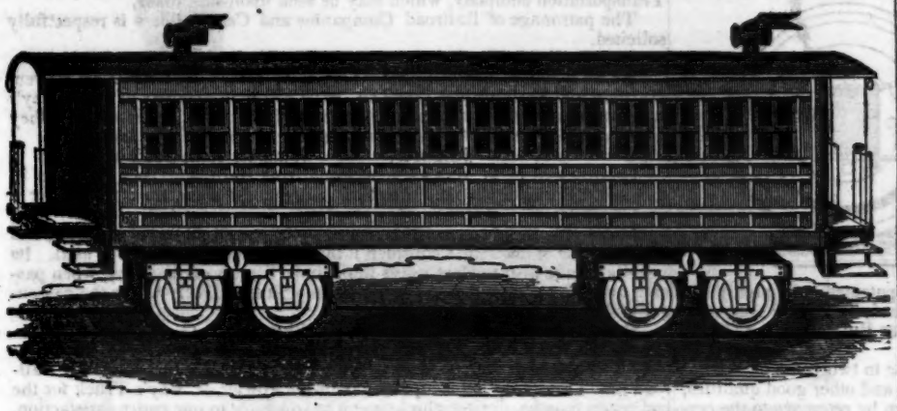
R. L. Stevens, President Camden and Amboy Railroad Company; Richard Peters, Superintendant Georgia Railroad, Augusta, Ga.; G. A. Nicolls, Superintendant Philadelphia, Reading and Pottsville Railroad, Reading, Pa.; W. E. Morris, President Philadelphia, Germantown and Norristown Railroad Company, Philadelphia; E. B. Dudley, President W. and R. Railroad Company, Wilmington, N. C.; Col. James Gadsden, President S. C. and C. Railroad Company, Charleston, S. C.; W. C. Walker, Agent Vicksburgh and Jackson Railroad, Vicksburgh, Miss.; R. S. Van Rensselaer, Engineer and Sup't Hartford and New Haven Railroad; W. R. M'Kee, Sup't Lexington and Ohio Railroad, Lexington, Ky.; T. L. Smith, Sup't New Jersey Railroad Trans. Co.; J. Elliott, Sup't Motive Power Philadelphia and Wilmington Railroad, Wilmington, Del.; J. O. Sterns, Sup't Elizabethtown and Somerville Railroad; R. R. Cuyler, President Central Railroad Company, Savannah, Ga.; J. D. Gray, Sup't Macon Railroad, Macon, Ga.; J. H. Cleveland, Sup't Southern Railroad, Monroe, Mich.; M. F. Chittenden, Sup't M. P. Central Railroad, Detroit, Mich.; G. B. Fisk, President Long Island Railroad, Brooklyn.

Orders for these Chimneys and Arresters, addressed to the subscribers, care Messrs. Baldwin & Whitney, of this city or to Hinckly & Drury, Boston, will be promptly executed. FRENCH & BAIRD.

N. B.—The subscribers will dispose of single rights, or rights for one or more States, on reasonable terms. *Philadelphia, Pa., April* 6, 1844.

*** The letters in the figures refer to the article given in the *Journal* of June, 1844. ja45

DAVENPORT & BRIDGES'
CAR WORKS, CAMBRIDGEPORT, MASS.

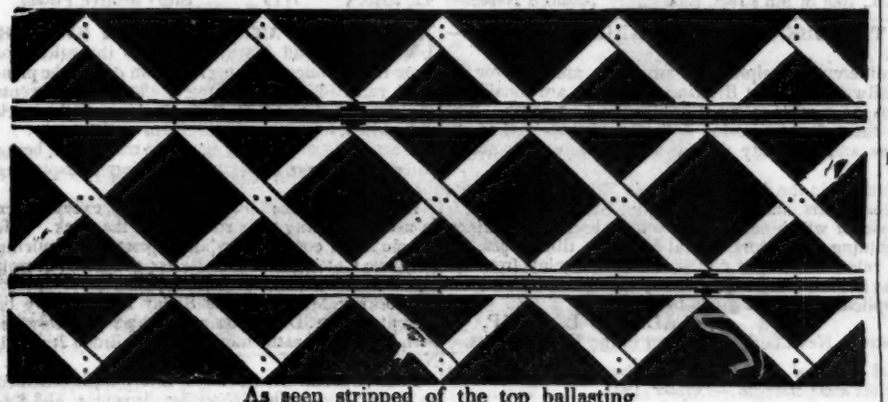


Manufacture to Order, Passenger and Freight Cars of every description, and of the most improved pattern; also furnish Snow Ploughs and Chilled Wheels of any pattern and size. Forged Axles, Springs, Boxes and Bolts for Cars at the lowest prices.

All orders punctually executed and forwarded to any part of the country.

Our Works are within fifteen minutes ride from State street, Boston—Omnibuses pass every fifteen minutes. 10tf

THE HERRON RAILWAY TRACK,



As seen stripped of the top ballasting

A GOLD MEDAL AWARDED THE INVENTOR BY THE AMERICAN INSTITUTE.

THE UNDERSIGNED RESPECTFULLY invites the attention of Engineers, and Railroad Companies, to some highly important improvements he has recently made in the Herron system of Railway structure. These improvements enable him to effect a very large reduction in the quantity of Timber, and cost of construction, without impairing the strength of the Track, or its powers of resisting frost, while they secure additional features of excellence in the Drainage and facility of making Repairs.

The above cut represents the "Herron Track" as it is laid on the Philadelphia and Reading, and on the Baltimore and Susquehanna Railroads. The intersection of the sills of the trellis are 5 feet from centre to centre, while in the new construction they are only 2½ feet. This renders the string piece unnecessary, thus removing the only objectionable feature found in the Track.

The result of experience has proved that all Tracks constructed with longitudinal timbers, such as mud sills, and more especially, the continuous bearing string pieces retain the rain water that falls between the Rails, which, being thus confined, settles along those timbers, and accumulating in quantity flows rapidly along them on the descending grades, washing out the earth from under the timber, and frequently causing large breaches in the embankments of the road. Whereas all water intercepted by the oblique sills of the trellis, is discharged immediately into the side ditches.

In the 5 foot plan, the Track occupies a Road bed nearly 11 feet wide, while the new construction takes but 8 feet; the timber being more concentrated under the Rails. A block of hard wood, about 2 feet long and 15 inches wide, is introduced into a square of the trellis for the purpose of giving an additional, and effectual support to the joints of the Rails, which rest upon it. Should these joint blocks become chafed and worn by the working, and imbedding of the chairs, as is now the case on all Railroads, they can be readily replaced without any derangement of the timbers less liable to wear.

The following is a general estimate of its cost near the seaboard. In the interior it will be considerably less.

ESTIMATE OF THE PROBABLE COST OF ONE MILE.

4,224 Timbers, 11 ft. long, 3 x 6 inches = 68,696 ft. b.m., at $10 =	$686 96
587 Oak joint blocks 2 ft. x 3 x 15 in. = 4,403 ft. b.m., at $13 =	57 24
13,000 Spikes = 2,250 lbs. at 4½ cts	101 25
Workmanship free of patent charge	600 00
Cost of one mile including the laying of the Rail	$1,445 45

He has made other important improvements, which will be shown in properly proportioned models, that give a much better idea of the great strength of the Track than a drawing will do.

Sales of the Patent right to all the distant States will be made on liberal terms.

JAMES HERRON.
Civil Engineer and Patentee.
No. 277 South Tenth St., Philadelphia. 33tf

LAP—WELDED
WROUGHT IRON TUBES
FOR
TUBULAR BOILERS,
FROM 1 1-4 TO 6 INCHES DIAMETER,
and
ANY LENGTH, NOT EXCEEDING 17 FEET.

These Tubes are of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER,
Patentee.
1y25 28 Platt street, New York.

RAILROAD IRON.
MOUNT SAVAGE IRON WORKS

THIS Company are prepared to execute orders for RAILROAD IRON, of any pattern, and equal in point of quality to any other manufactured.

Address J. M. HOWE,
Pres't. Mt. Savage Iron Works,
Dec. 25, 1y* Maryland.

ENGINEERS' AND SURVEYERS'
INSTRUMENTS MADE BY
EDMUND DRAPER,
Surviving partner of
STANCLIFFE & DRAPER.

No 23 Pear street, below Walnut,
1y10 near Third, Philadelphia.

THE SUBSCRIBER has on hand a good assortment of his best Leveling and Surveying Instruments, among them his improved Compass for taking angles without the needle—also Bells, suitable for Churches, Railroad Depots, etc. ANDREW MENEELY.
West Troy, May 12, 1847. 1y*21

PIG AND BLOOM IRON.—THE SUBSCRIBERS are agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniatta Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,
12tf Vine St. Wharf, Philadelphia.

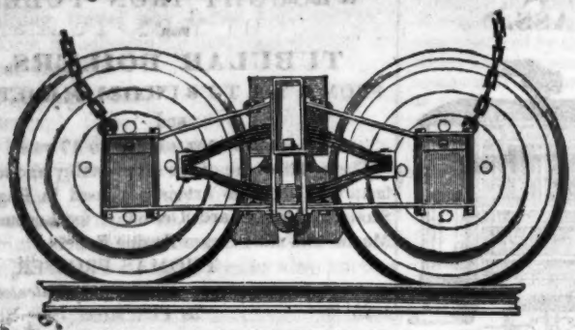
RAILROAD IRON.—THE "MONTOUR Iron Company," Danville, Pa., is prepared to execute orders for the heavy Rail Bars of any pattern now in use, in this country or in Europe, and equal in every respect in point of quality. Apply to MURDOCK, LEAVITT & CO.,
Agents.
1y48 77 Pine St., New York.

LAWRENCE'S ROSENDALE HYDRAulic Cement. This cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight papered barrels, by JOHN W. LAWRENCE,
142 Front street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y

RAY'S EQALIZING RAILWAY TRUCK.—THE SUBSCRIBER having recently formed a business connection in the City of New



York, [illegible]ely for the manufacture of the newly patented and highly approved Railroad Truck of Mr. Fowler M. Ray, is ready to receive orders for building the same, from Railroad Companies and Car Builders in the United States, and elsewhere.

The above Truck has now been in use from one to two years on several roads a sufficient length of time to test its durability, and other good qualities, and to satisfy those who have used it, as may be seen by reference to the certificates which follow this notice.

There have been several improvements lately introduced upon the Truck, such as additional springs in the bolster of passenger cars, making them delightful riding cars—adapting it to tenders, trucks forward of the locomotive, and freight cars, which, with its original good qualities, make it in all respects the most desirable truck now offered to the public.

Orders for the above, will, for the present, be executed at the New York Screw Mill, corner 33d street and 3d avenue, (late P. Cooper's rolling mills) and at the Steam Engine Shop of T. F. Secor & Co., foot of 9th street, East river, (of which firm the subscriber was late a partner) under the immediat supervision of Mr. Ray himself.

Several sets of trucks containing the latest improvements have recently been turned out for the New York and Erie railroad, and the New Jersey Transportation company, which may be seen upon said roads.

The patronage of Railroad Companies and Car Builders is respectfully solicited.

New York, May 4, 1846. W. H. CALKINS, and Others.

To all whom it may concern:—This is to certify that the New Haven, Hartford and Springfield railroad co., have had in use six sets of F. M. Ray's patent trucks for the last 20 months, during which time it appears to me, they have proved to be the bes and most economical truck now in use.

[Signed,] WILLIAM ROE, Sup't of Power.

I certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Philadelphia and Reading railroad for some time past, under a passenger car.

For simplicity of construction, economy in cost, lightness of material, and extreme ease of motion, I consider it the best truck we have ever used. Its peculiar make also renders it less liable to be thrown off the track, when passing over any obstruction. We intend using it extensively under the passenger and freight cars of the above road.

Reading, Pa., October 6, 1845. [Signed,] G. A. NICOLL,
Sup,t Transportation, etc., Philadelphia and Reading Railroad.

To all whom it may concern:—This is to certify that the N. Jersey Railroad and Transportation company have used Fowler M. Ray's Truck for the last seven months, during which time it has operated to our entire satisfaction. I have no hesitation in saying that it is the simplest and most economical truck now in use. [Signed,] T. L. SMITH,

Jersey City, November 4, 1845. N. Jersey Railroad and Transp. Co.

This is to certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Long Island railroad for the last year, under a freight car.

For simplicity of construction, economy in cost, lightness of material and ease of motion, I consider it equal to any truck we have in use.

Long Island Railroad Depot, Jamaica November 12, 1845. } [Signed,] JOHN LEACH, Sup't Motive Power

1y19

ENGLISH PATENT WIRE ROPES—FOR THE USE OF MINES, RAILWAYS, ETC.—for sale or imported to order by the subscriber.

These Ropes are manufactured on an entirely different principle from any other, and are now almost exclusively used in the collieries and on the railways in Great Britain, where they are considered to be greatly superior to hempen ones, or iron chains, as regards safety, durability and economy. The plan upon which they are made effectually secures them from corrosion in the interior, as well as the exterior of the rope, and gives a greater compactness and elasticity than is found in any other manufacture.

Many of these ropes have been in constant operation in the different mines in England, and on the Blackwall and other inclined planes, for three and four years, and are still in good condition.

They have been applied to almost every purpose for which hempen ropes have been used—mines, heavy cranes, standing rigging, window cords, lightning conductors, signal halyards, tiller ropes, etc. Reference is made to the annexed statement for the relative strength and size. Testimonials from the most eminent engineers in England can be shown as to their efficiency, and any additional information required respecting the different descriptions and application will be given by

ALFRED L. KEMP,
75 Broad street, New York, sole agent in the United States.

Statement of Trial made at the Woolwich Royal Dock Yard, of the Patent Wire Ropes, as compared with Hempen Ropes and Iron Chains of the same strength.—October, 1841.

WIRE ROPES.				HEMPEN ROPES.			CHAINS.		STRENGTH
Wire gauge number.	Circumference of rope.	Weight per fathom.		Circumference of rope.	Weight per fathom.		Weight per fathom.	Diameter of iron.	Tons.
	INCH.	LBS.	OZ.	INCH.	LBS.	OZ.	LBS.	INCH.	
11	4½	13	5	10	24	–	50	15-16	20
13	3½	8	3	8½	16	–	27	11-16	13½
14	3¼	6	11	7½	12	8	17	9-16	10½
15	2¾	5	2	6½	9	4	13½	1-2	7½
16	2½	4	3	6	8	8	10½	7-16	7

N.B. The working load, with a perpendicular lift, may be taken at 6 *cwt. for every lb. weight per fathom, so that a rope weighing* 5 *lbs. per fathom would safely lift* 3360 *lbs., and so on in proportion.* 1y24

RAILROAD SCALES.—THE ATTENTION of Railroad Companies is particularly requested to Ellicotts' Scales, made for weighing loaded cars in trains, or singly, they have been the inventors, and the first to make platform scales in the United States; supposing that an experience of **20** years has given a knowledge and superior advantage in the business.

The levers of our scales are made of wrought iron, all the bearers and fulcrums are made of the best cast steel, laid on blocks of granite, extending across the pit, the upper part of the scale only being made of wood. E. Ellicott has made the largest Railroad Scale in the world, its extreme length was one hundred and twenty feet, capable of weighing ten loaded cars at a single draft. It was put on the Mine Hill and Schuylkill Haven Railroad.

We are prepared to make scales of any size to weigh from five pounds to two hundred tons.

ELLICOTT & ABBOTT.
Factory, 9th street, near Coates, cor. Melon st.
Office, No. 3 North 5th street,
1y25 Philadelphia, Pa.

THE SUBSCRIBERS, AGENTS FOR the sale of

Codorus,
Glendon,
Spring Mill and
Valley,
} Pig Iron.

Have now a supply, and respectfully solicit the patronage of persons engaged in the making of Machinery, for which purpose the above makes of Pig Iron are particularly adapted.

They are also sole Agents for Watson's celebrated Fire Bricks and prepared Kaolin or Fire Clay orders for which are promptly supplied.

SAM'L. KIMBER, & CO.,
59 North Wharves,
Jan. 14, 1846. [1y4] *Philadelphia, Pa.*

RAILWAY IRON.—THE BEST QUALITY of English Heavy H Rails—60 lbs. to the yard—now in store, landing from the vessel, and on ship board to arrive, for sale on most favorable terms by

DAVIS, BROOKS & CO.,
Jan. 2. [1tf] 68 Broad St., New York.

NICOLL'S PATENT SAFETY SWITCH for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee

G. A. NICOLLS,
ja45 *Reading, Pa.*

TO RAILROAD COMPANIES AND MANufacturers of railroad Machinery. The subscribers have for sale Am. and English bar iron, of all sizes; English blister, cast, shear and spring steel; Juniata rods; car axles, made of double refined iron; sheet and boiler iron, cut to pattern; tiers for locomotive engines, and other railroad carriage wheels, made from common and double refined B. O. iron; the latter a very superior article. The tires are made by Messrs. Baldwin & Whitney, locomotive engine manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside.

THOMAS & EDMUND GEORGE,
a45 N. E. cor. 12th and Market sts., Philad., Pa.

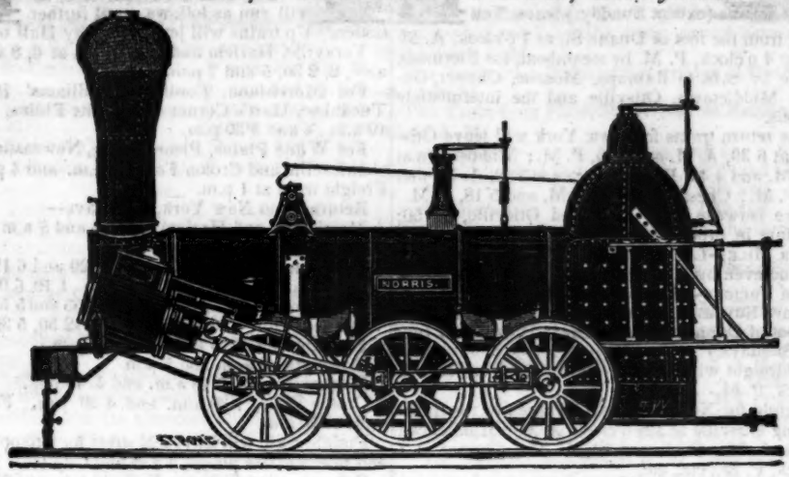
RAILROAD IRON.—THE NEW JERSEY Iron Company, Boonton, N. J., are now making Railroad Bars, and are prepared to execute orders for any required pattern. Apply to

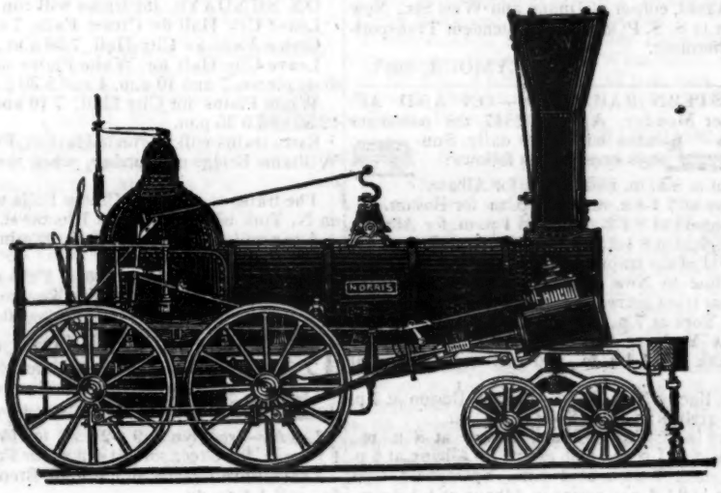
FULLER & BROWN, Agents,
No. 139 Greenwich, corner of Cedar street.
June 1, 1847. 10tf

RAILWAY IRON.—DAVIS, BROOKS & Co., No. 68 Broad Street, have now in port on Ship-board, 200 Tons of the best English heavy H Rails, 60 lbs. to the lineal yard, which they offer for sale on favorable terms, *also*, about 6 to 700 Tons now on the way, to arrive shortly, of the same description of Rail. 46tf

NORRIS' LOCOMOTIVE WORKS.

BUSH HILL, PHILADELPHIA, Pennsylvania.





MANUFACTURE their Patent 6Wheel Combined and 8 Wheel Locomotives of the following descriptions, viz:

Class	1,	15 inches	Diameter	of	Cylinder,	× 20	inches	Stroke.
"	2,	14	"	"	"	× 24	"	"
"	3,	14½	"	"	"	× 20	"	"
"	4,	12½	"	"	"	× 20	"	"
"	5,	11½	"	"	"	× 20	"	"
"	6,	10½	"	"	"	× 18	"	"

With Wheels of any dimensions, with their Patent Arrangement for Variable Expansion.

Castings of all kinds made to order: and they call attention to their Chilled Wheels, for the Trucks of Locomotives, Tenders and Cars.

NORRIS, BROTHERS.

KEARNEY FIRE BRICK. F. W. BRINLEY, Manufacturer, Perth Amboy, N. J. Guaranteed equal to any, either domestic or foreign. Any shape or size made to order. Terms, 4 mos. from delivery of brick on board. Refer to

James P. Allaire, Peter Cooper, Murdock, Leavirt & Co. } New York.
J. Triplett & Son, Richmond, Va.
J. R. Anderson, Tredegar Iron Works, Richmond, Va.
J. Patton, Jr. & Colwell & Co. } Philadelphia, Pa.
J. M. L. & W. H. Scovill, Waterbury, Con.
N. E. Screw Co. Eagle Screw Co. } Provicence, R. I.
William Parker, Supt. Bost. and Worc. R. R.
New Jersey Malleable Iron Co., Newark N. J
Gardiner, Harrison & Co. Newark, N. J
25,000 to 30,000 made weekly. 35

THE NEWCASTLE MANUFACTURING Company continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack screws, Wrought iron work and Brass and Iron castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention. ANDREW C. GRAY,
a45 President of the Newcastle Manuf. Co.

RAILROAD IRON AND LOCOMOTIVE Tyres imported to order and constantly on hand by A. & G. RALSTON
Mar. 20tf 4 South Front St., Philadelphia.

VALUABLE PROPERTY ON THE MILL Dam For Sale. A lot of land on Gravelly Point, so called, on the Mill Dam, in Roxbury, fronting on and east of Parker street, containing 68,497 square feet, with the following buildings thereon standing.

Main brick building, 120 feet long, by 46 ft wide, two stories high. A machine shop, 47x43 feet, with large engine, face, screw, and other lathes, suitable to do any kind of work.

Pattern shop, 35x32 fe. with lathes, work benches,

Work shop, 86x35 feet, on the same floor with the pattern shop.

Forge shop, 118 feet long by 44 feet wide on the ground floor, with two large water wheels, each 16 feet long, 9 ft diameter, with all the gearing, shafts, drums, pulleys, &c., large and small trip hammers, furnaces, forges, rolling mill, with large balance wheel and a large blowing apparatus for the foundry.

Foundry, at end of main brick building, 60x45½ feet two stories high, with a shed part 45½x20 feet, containing a large air furnace, cupola, crane and corn oven.

Store house—a range of buildings for storage, etc., 200 feet long by 20 wide.

Locomotive shop, adjoining main building, fronting on Parker street, 54x25 feet.

Also—A lot of land on the canal, west side o Parker st., containiug 6000 feet, with the following buildings thereon standing:

Boiler house 50 feet long by 30 feet wide, two stories.

Blacksmith shop, 49 feet long by 20 feet wide.

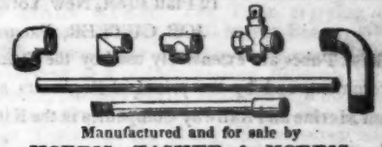
For terms, apply to HENRY ANDREWS, 48 State st., or to CURTIS, LEAVENS & CO., 106 State st., Boston, or to A. & G. RALSTON & Co., Philadelphia. ja45

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to ¼ in calibre and 2 to 19 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T's, L's, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.



Manufactured and for sale by
MORRIS, TASKER & MORRIS.
Warehouse S. E. Corner of Third & Walnut Streets,
PHILADELPHIA.

TO LOCOMOTIVE AND MARINE ENgine Boiler Builders. Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; Hollow Pistons for Pumps of Steam Engines, etc. Manufactured and for sale by
MORRIS TASKER & MORRIS,
Warehouse S. E. corner 3d and Walnut Sts., Philadelphia. 1tf

PATENT INDESTRUCTIBLE WATER Pipes. The subscribers continue to manufacture the above PIPES, of all the sizes and strength required for City or Country use, and would invite individuals or companies to examine its merits.—This pipe, unlike cast iron and lead, imparts neither color, oxide or taste, being formed of strongly riveted sheet iron, and evenly lined on the inside with hydraulic cement. While in the process of laying, it has a thick covering externally of the same—thus forming nature's own conduit of stone. The iron being thoroughly enclosed on both sides with cement, precludes the possibility of rust or decay, and renders the pipe truly *indestructible*. The prices are less than those of iron or lead. We also manufacture Basons and D. Traps, for Water Closets, on a new principle, which we wish the public to examine at 112 Fulton street, New York.
28tf J. BALL & CO.

THE SUBSCRIBER IS PREPARED TO execute at the Trenton Iron Works, orders for Railroad Iron of any required pattern, and warranted equal in every respect in point of quality to the best American or imported Rails. Also on hand and made to order, Bar Iron, Braziers' and Wire Rods, etc., etc.

PETER COOPER 17 Burling Slip.
1y10 New York.

LOCOMOTIVE AND CAR AXLES. The Subscribers are now prepared to receive orders for the well known and approved *Reading Locomotive and Car Axles*—drawn to any required pattern from *Bloom Iron only.* Address

SAM'L KIMBER & CO.,
Willow Street Wharf,
4tf Philadelphia, Pa.

THE SUBSCRIBERS ARE PREPARED TO execute orders at their Phœnix Works for Railroad Iron of any required pattern, equal in quality and finish to the best imported.

REEVES, BUCK & CO.,
Philadelphia.
ROBERT NICHOLS, Agent,
26tf No. 79 Water St., New York.

SPRING STEEL FOR LOCOMOTIVES, Tenders and Cars. The Subscriber is engagep in manufacturing Spring Steel from 1¼ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address

JOAN F. WINSLOW, *Agent,*
1y Albany Iron and Nail Works,

LAP-WELDED WROUGHT IRON TUBES for Tubular Boilers, from 1¼ to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by

IRVING VAN WART,
12 Platt street, New York.
JOB CUTLER, Patentee.

These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom. 28tf

BACK VOLUMES OF THE RAILROAD JOURNAL for sale at the office, No. 105 Chestnut street.

CONCORD RAILROAD.—PASSENGER Trains in connection with the Lowell & Nashua Railroads, run daily between Concord and Boston, Sundays excepted, as follows. viz:

Leave Concord at 5 40 and 11 5 a.m. and 3 15 p.m.
Leave Boston at 7 and 11 a.m. and 5 p.m.

This road runs by Nashua and Manchester to Concord N. H., where it connects with the Northern railroad, extending from Concord to the mouth of White river in Vermont, 18 miles of which road, to Franklin, is now opened, and the remainder is rapidly completing.

It is the direct route to Central and northern New Hampshire, and to Montpelier, Burlington, and other towns in northern Vermont, and has a greater proportion of railroad conveyance in those directions than any other line.

It is also the British Steam Mail Line, and the nearest route from Boston to the Canadas. Numerous stages connect with all parts of the road.

For further information, apply at B. P. Cheney & Co.'s Express office, No. 8 Court St., and Averill & Dean, No. 15 Elm St.

All passengers' baggage should be properly marked, and when valued at more than $50, notice must be given, and extra charges paid, or no loss beyond such amount will be allowed.

26tf N. G. UPHAM, Supt.

NEW YORK AND ERIE RAILROAD LINE SUMMER ARRANGEMENT. For passengers, twice each way daily, (except Sunday,) leave New York from the foot of Duane St. at 7 o'clock, A. M. and at 4 o'clock, P. M. by steamboat, for Piermont, thence by cars to Ramapo, Monroe, Chester, Goshen, Middletown, Otisville, and the intermediate stations.

The return trains for New York will leave Otisville at 6 30, A. M. and 4 15, P. M.; Middletown at 7 A. M. and 4 40, P. M.; Goshen at 7 22, A. M. and 5 3, P. M.; Chester at 7 35, A. M. and 5 18, P. M.

Fare between New York and Otisville, $1 50; way-fare in proportion.

FOR MILK—Leave Otisville at 5½ o'clock, morning and evening.

FOR FREIGHT—The barges "Samuel Marsh and "Henry Suydam, Jr." will leave New York (from the foot of Duane St.) at 5 o'clock, P. M. daily (except Sundays.)

No freight will be received in New York after 5 o'clock, P. M.

Freight for New York will be taken by the trains leaving Otisville at 10½ o'clock, A. M.; Middletown at 11½, A. M.; Goshen at 12½, P. M.; Chester at 1 o'clock, P. M., etc., etc.

For farther particulars, apply to J. F. CLARKSON, Agent, corner of Duane and West Sts., New York, or to S. S. POST, Superintendent Transportation, Piermont.

24tf H. C. SEYMOUR, Sup't.

WESTERN RAILROAD.—ON AND AFTER Monday, April 5, 1847, the passenger trains will leave daily, Sundays excepted, as follows:

Boston at 8 a. m. and 4 p. m. for Albany.
Albany at 7 1-4 a. m. and 5 p. m. for Boston.
Springfield at 8 1-2 a. m. and 1 p. m. for Albany.
Springfield at 8 1-2 a. m. and 1 1-2 and 3 p. m. (or on arrival of the train from New York) for Boston.

Day line to New York, via Springfield.—The steamboat train leaves Boston at 6 a. m., and arrives in New York at 7 p. m., by the steamboats Traveller, New York, or Champion. Returning, leaves New York at 6 1-4 a. m., and arrives in Boston at 7 p. m.

Night line to New York.—Leaves Boston at 4 p. m., and arrives in New York at 5 a. m.

Albany and Troy.—Leave Boston at 8 a. m., Springfield at 1 p. m., and arrive in Albany at 6 p. m.; or, leave Boston at 4 p.m., Springfield next morning at 8 1-2, and arrive in Albany at 1 1-2 p.m.

The Troy trains connect at Greenbush.

The trains for Buffalo leave at 7½ a.m. and 7 p.m.

For Northampton, Greenfield, etc.—The trains of the Connecticut River Railroad leave Springfield at 8 1-4 a.m., 1 and 3 p.m., and passengers proceed directly on to Brattleboro', Windsor, Bellows Falls, Walpole, Hanover, Haverhill, etc.

For Hartford.—The trains leave Springfield on the arrival of the trains from Boston.

The trains of Pittsfield and North Adams Railroad leave Pittsfield on the arrival of the trains from Boston.

N. B.—No responsibility assumed for any baggage by the passenger trains, except for wearing apparel not exceeding the value of fifty dollars, unless by special agreement.

JAMES BARNES, Sup't and Eng'r.
C. A. SEAD, Agent, 27 State street, Boston.

BOSTON AND PROVIDENCE RAILroad. Passenger Notice. Summer Arrangement. On and after Monday, April 5, 1847, the Passenger Trains will run as follows:

Steamboat train via Stonington—Leaves Boston every day, except Sunday, at 5 o'clock p.m.

Accommodation Trains—leave Boston at 7 and 10½ a.m. and 4 p.m., and Providence at 7½ and 10½ a.m. and 4½ p.m.

Dedham trains, leave Boston at 8 a.m., 12½, 3½, 6½ and 9 p.m., Leave Dedham at 7 and 9½ a.m. and 2½, 5½ and 8 p.m.

Stoughton trains, leave Boston at 11½ a.m. and 5½ p.m. Leave Stoughton at 7 10 a.m. and 3½ p.m.

All baggage at the risk of the owners thereof.

25tf W. RAYMOND LEE, *Sup't.*

NEW YORK & HARLEM RAILROAD CO.—Summer Arrangement.—On and after Tuesday, June 1st, 1847, the cars will run as follows, until further notice. Up trains will leave the City Hall for—

Yorkville, Harlem and Morrisana at 6, 8 and 11 a.m., 2, 2 30, 5 and 7 p.m.

For Morrisiana, Fordham, Williams' Bridge, Tuckahoe, Hart's Corner and White Plains, 7 and 10 a.m., 4 and 5 30 p.m.

For White Plains, Pleasantville, Newcastle, Mechanicsville and Croton Falls, 7 a.m. and 4 p.m.—Freight train at 1 p.m.

Returning to New York, will leave—

Morrisiana and Harlem, 7, 8 20 and 9 a.m., 1, 3, 4 30, 6, 6 28 and 8 p.m.
Fordham, 8 08 and 9 15 a.m., 1 20 and 6 15 p.m.
Williams Bridge, 8 and 9 08 a.m., 1 10, 6 08 p.m.
Tuckahoe, 7 38 and 8 25 a.m., 12 55 and 5 52 p.m.
White Plains, 7 10 and 8 35 a.m., 12 50, 5 35 p.m.
Pleasantville, 8 15 a.m. and 5 15 p.m.
Newcastle, 8 a.m. and 5 p.m.
Mechanicsville, 7 48 a.m. and 4. 48 p.m.
Croton Falls, 7 30 a.m. and 4 30 p.m. Freight train at 10 a.m.

Freight train will leave 32d street for Croton Falls and intermediate places, 4 a.m and City Hall 1 p.m. Returning, leave Croton Falls 10 a.m. and 9½ p.m.

ON SUNDAYS, the trains will run as follows:
Leave City Hall for Croton Falls, 7 a.m, 4 p.m.
Croton Falls for City Hall, 7 30 a.m., 4 30 p.m.
Leave City Hall for White Plains and intermediate places, 7 and 10 a.m. 4 and 5 30 p.m.
White Plains for City Hall, 7 10 and 8 35 a.m., 12 30 and 5 35 p.m.

Extra trains will be run to Harlem, Fordham and Williams Bridge on Sunday, when the weather is fine.

The trains to and from Croton Falls will not stop on N. York island, except at Broome st. and 32d st.

A car will preceed each train 10 minutes to take up passengers in the city.

Fare from New York to Croton Falls and Somers $1, to Mechanicsville 87½c., to Newcastle 75c., to Pleasantville 62½c., to White Plains 50c. 25tf

LONG ISLAND RAILROAD COMPANY. Summer Arrangement. On and after Monday May 1st, trains will run as follows, except Sundays:

Leave—Brooklyn at 9 1-2 a.m. for Farmingdale, 1 1-2 p.m. for Greenport, at 4 p.m. for Farmingdale.
Leave Farmingdale at 7 a.m for Brooklyn, 12 m. do., at 3 1-4 do. do.
Leave Greenport at 8 1-2 a.m. for Brooklyn.
Leave Jamaica at 8 a.m. for Brooklyn, at 1 p.m. do., at 4½ p.m do.

On Saturdays, a train will leave Brooklyn for Yaphank, at 4 p.m. Leave Yaphank, on Mondays for Brooklyn at 5 1-2 a.m.

On and after May 15th, and until September 1st, 1847, a train will leave Jamaica at 7 a.m. for Brooklyn—leave Brooklyn at 6 p.m. for Jamaica, and will land and receive passengers at any place between Brooklyn and Jamaica.

On Sundays—leave Brooklyn at 8 1-2 a.m. for Farmingdale; leave Farmingdale at 4 p. m. for Brooklyn.

Freight Trains—leave Brooklyn at 10 a.m. for Greenport; leave Greenport at 12 m. for Brooklyn.

Baggage crates will be in readiness at the foot of Whitehall street, to receive baggage for the several trains, 30 minutes before the hour of starting from the Brooklyn side.

The steamer "Statesman," Captain Nash, leaves Greenport for Sag Harbor on the arrival of the Accommodation train from Brooklyn.

25tf DAVID S. IVES, Sup't.

PATERSON RAILROAD
Summer Arrangement.

Commencing April 20th, 1847, the cars will leave

Paterson at	New York at
8 o'clock a.m.	9½ o'clock a m.
11½ o'clock a.m	12 1-4 o'clock p.m.
4 o'clock p.m.	5½ o'clock p.m.
On Sunday.	
8 o'clock a.m.	9½ o'clock a.m.
4 o'clock p.m.	5½ o'clock p.m.

25tf Office 75 Courtlandt St.

BALTIMORE AND SUSQUEHANNA Railroad.—Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger trains run daily, except Sunday, as follows:

Leaves Baltimore at.....9 a.m. and 3½ p.m.
Arrives at.....9 a.m. and 6½ p.m.
Leaves York at.....5 a.m. and 3 p.m.
Arrives at.....12½ p.m. and 8 p.m.
Leaves York for Columbia at..1½ p.m. and 8 a.m.
Leaves Columbia for York at..8 a.m. and 2 p.m.

FARE.

Fare to York.....$1 50
" Wrightsville..... 2 00
" Columbia..... 2 12½
Way points in proportion.

PITTSBURG, GETTYSBURG AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg..... $9
Or via Lancaster by railroad..... 10
Through tickets to Harrisburg or Gettysburg.. 3
In connection with the afternoon train at 3½ o'clock, a horse car is run to Green Spring and Owing's Mill, arriving at the Mills at.....5½ p.m.
Returning, leaves Owing's Mills at.....7 a.m.

D. C. H. BORDLEY, *Sup't.*
31 1y Ticket Office, 63 North st.

BOSTON AND MAINE RAILROAD. Upper Route, to Portland and the East.

SUMMER ARRANGEMENT,
April 1, 1847.

PORTLAND TRAINS.

Leave Boston at 7 A.M. and 2½ P.M.
Leave Portland at 7½ A.M. and 3 P.M.

GREAT FALLS TRAIN.

Leave Boston at 5 P.M.
Leave Great Falls at 6½ A.M.

HAVERHILL TRAINS.

Leave Boston at 11½ A.M. and 6·20 P.M.
Leave Haverhill at 6½ A.M. and 4½ P.M.

READING TRAINS.

Leave Boston at 8½ A.M. and 8½ P.M.
Leave Reading at 6 A.M. and 1½ P.M.

MEDFORD BRANCH TRAINS.

Leave Boston at 7½, 11½ A.M., 2½, 5½, 7 P.M.
Leave Medford at 6½, 8 A.M., 1½, 4½, 6 P.M.

The Depot in Boston is on Haymarket Square.

Passengers are not allowed to carry Baggage above **$50** in value, and that *personal*, unless notice is given, and an extra amount paid, at the rate of the price of a Ticket for every **$500** additional value.

1y31 CHAS. MINOT, *Sup'r.*

NORWICH AND WORCESTER RAILROAD. Summer Arrangement. Change of Hours. Commencing on Wednesday, April 21, 1847.

Accommodation Trains, daily, (except Sunday.) Leave Norwich, at 6 a. m., and 4½ p. m. Leave Worcester, at 8½ a. m., and 4½ p. m.

☞ The morning Accommodation Trains from Norwich, and from Worcester, connect with the trains of the Boston, and Worcester and Western railroads each way.

The Evening Accommodation Train from Worcester connects with the 2½ p.m. train from Boston.

New York Train via Steamboat—Leave Norwich for Boston, every morning, except Monday, on the arrival of the stamboat from New York, stopping at Norwich and Danielsonville.

Leave Worcester for New York, upon the arrival of the train from Boston, at about 6½ p.m., daily, except Sunday, stopping at Danielsonville and Norwich.

Freight Trains daily each way, except Sunday.—Leave Norwich at 7, and Worcester at 6 30 a. m. Special contracts will be made for cargoes, or large quanties of freight, on application to the superintendent.

☞ *Fares are Less when paid for Tickets than when paid in the Cars.* ☜

32 1y ..... J W. STOWELL, Sup't

PHILADELPHIA AND READING RAILROAD.—Passenger Train Arrangement for

1847.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock A. M.

The Train from Philadelphia arrives at Reading at 12 18 M.

The Train from Pottsville arrives at Reading at 10 43 A. M.

Fares.	Miles.	No. 1.	No. 2.
Between Phila. and Pottsville,	92	$3·50 and	$3·00
" " Reading,	58	2·25 and	1·90
" Pottsville "	34	1·40 and	1·20

Five minutes allowed at Reading; and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets. 8tf

PHILADELPHIA, WILMINGTON & BALTIMORE RAILROAD.—1847.

Summer Arrangement.

Philadelphia for Baltimore...8 a.m. and 10 p.m.
Baltimore for Philadelphia...9 a.m. and 8 p.m.
Connecting with Mail Lines North, South & West.

On Sundays, only the 10 P. M. Lines run.

The Boat Lines, via Newcastle & Frenchtown R.R. Leave Philadelphia at 3½ p.m. } No line on Sun-
Leave Baltimore at 3 p.m. } day.

Accommodation Trains between Philadelphia & Wilmington.—Philadelphia to Wilmington, 8 a.m., *mail*, 12½ p.m., 4 p.m., 7 p.m., 10 p.m. *mail*. Wilmington to Philadelphia, 7 a.m., 1 p.m., *mail*, 4½ p. m., 7 p.m., 12½ a.m., *night mail*.

J. R. TRIMBLE,
2tf *Engineer and General Superintendent.*

CONNECTION BETWEEN THE BOSTON and Lowell and the Boston and Maine Railroads. On and after April 1st, 1847, passenger trains between these two roads, will run as follows, viz:

Leaving Lowell at 7, 11 1-4 a.m., and 2 1-2, 4 1-2, and 6 1-2 p.m., to connect at the junction in Wilmington with the eastward trains—at 7 a.m. and 2 1-2 p.m. with those to Portland; at 4 1-2 p.m. to Great Falls only, with a detention of 45 minutes at the junction, and at 11 1-4 a.m. and 6 1-2 p.m. to Haverhill only. Leaving the junction in Wilmington, for Lowell, at about 7 1-4 a.m. on arrival of the morning train from Haverhill; at about 9 a.m., on arrival of the morning trains from Great Falls. At about 11 3-4 a.m., on arrival of the morning train from Portland. At about 5 p.m. on arrival of the afternoon trains from Haverhill. At about 7 1-4 p. m. on arrival of the afternoon train from Portland.

WALDO HIGGINSON, Agent.

NEW YORK AND PHILADELPHIA RAILroad line—direct. Via Newark, New Brunswick, Princeton, Trenton, and Bristol. (Through in six hours.) Leaving New York daily from the foot of Liberty street.

Morning line.....9 o'clock a.m.
Mail pilot line.....4½ " p.m.

The lines proceed direct to Bristol without change of cars, and thence by the new steamer, "John Stevens," to Philadelphia.

FARE BETWEEN NEW YORK & PHILA.

First class cars.....$4 00
Second class cars..... 3 00

Passengers will procure their *Tickets* at the office foot of Liberty st., where a commodious steamboat will be in readiness with Baggage-crates on board.

Fifty pounds of baggage will be allowed to each passenger in this line, and passengers are expressly prohibited from taking anything as baggage but their wearing apparel, which will be at the risk of the owner.

Philadelphia Baggage-crates are conveyed from city to city, without being opened by the way. Each train is provided with a car, in which are apartments and dressing rooms expressly for ladies' use.

Returning, the lines leave Philadelphia from the foot of Walnut st. at 9 a.m, and 4 1-2 p.m.

The lines for Baltimore leave Philadelphia daily, except Sundays, at 8 a.m., 3½ and 10 p.m., and Sundays only at 10 p.m.—being a continuation of the line from New York. 25tf

LITTLE MIAMI RAILROAD.—OPEN TO SPRINGFIELD—Distance 84 miles—connecting at Xinia and Springfield with Messrs. Neil, Moore, & Co's. daily daylight lines of stages going east and north, to Columbus, Zanesville, Wheeling, Cleveland, and Sandusky City. via Urbana, Bellefontaine, Kenton, and the Mad river and lake Erie railroad, or Columdus, Delaware, and the Mansfield and Sundusky City railroad—forming, by these connections, the cheapest and most expeditious route to Buffalo, Niagara Falls, Rochester, Albany, New York, and Boston.

On and after Thursday, August 13, 1846, until further notice, a Passenger train will run as follows:

Leave Cincinnati daily at 9 A. M., for Milford, Foster's Crossing, Deerfield, Morrow, Fort Ancient, Freeport, Waynesville, Spring Valley, Xenia, Old Town, Yellow Springs, and Springfield.

Returning, will leave Springfield at 4 hours 35 minutes A. M. A line of Hacks runs in connection with the Cars, between Deerfield and Lebanon.

FARE—From Cincinnati to Lebanon....$1 00
" " " Xenia..... 1 50
" " " Springfield.. 2 00
" " " Columbus... 4 00
" " " Sundusky city 8 00

The Passenger trains runs in connection with Strader & Gorman's line of Mail Packets to Louisville.

Tickets can be procured at the Broadway Hotel, Dennison House, or at the Depot of the Company on East Front street.

Further information and through tickets for the Stage lines, may be procured at P. Campbell, Agent on Front street, near Broadway.

The company will not be responsible for baggage beyond 50 dollars in value, unless the same is returned to the conductor or agent, and freight paid at of a passage for every $500 in value over that amount.

The 1½ P. M. train from Cincinnati, and the 2 40 P. M. train from Xenia, will be discontinued on and after Monday, the 10th instant.

A freight train will run daily.

47tf W. H. CLEMENT, *Sup't.*

BALTIMORE AND OHIO RAILROAD. MAIN STEM. The Train carrying the Great Western Mail leaves Baltimore every morning at 7½ and Cumberland at 8 o'clock, passing Ellicott's Mills, Frederick, Harpers Ferry, Martinsburgh and Hancock, connecting daily each way with—the Washington Trains at the Relay House seven miles from Baltimore, with the Winchester Trains at Harpers Ferry — with the various railroad and steamboat lines between Baltimore and Philadelphia and with the lines of Post Coaches between Cumberland and Wheeling and the fine Steamboats on the Monongahela Slack Water between Brownsville and Pittsburgh. Time of arrival at both Cumberland and Baltimore 5½ P. M. Fare between those points $7, and 4 cents per mile for less distances. Fare through to Wheeling $11 and time about 36 hours, to Pittsburgh $10, and time about 38 hours. Through tickets from Philadelphia to Wheeling $13, to Pittsburgh $12. Extra train daily except Sundays from Baltimore to Frederick at 4 P. M., and from Frederick to Baltimore at 8 A. M.

WASHINGTON BRANCH.

Daily trains at 9 A. M. and 5 P. M. and 12 at night from Baltimore and at 6 A. M. and 5½ P. M. from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington and the Relay house. Fare $1 60 through between Baltimore and Washington, in either direction, 4 cents per mile for intermediate distances. s13y1

LEXINGTON AND OHIO RAILROAD. Trains leave Lexington for Frankfort daily, at 5 o'clock a.m., and 2 p.m. Trains leave Frankfort for Lexington daily, at 8 o'clock a.m. and 2 p.m. Distance, 28 miles. Fare $1·25.

On Sunday but one train, 5 o'clock a.m. from Lexington, and 2 o'clock p.m. from Frankfort.

The winter arrangement (after 15th September to 15th March) is 6 o'clock a.m. from Lexington, and ma. 9. from Frankfort, other hours as above. 35tf

CENTRAL AND MACON AND WESTERN Railroads, Ga.—These Roads with the Western and Atlantic Railroad of the State of Georgia, form a continuous line from Savannah to Oothcaloga, Ga., of 371 miles, viz:

	Miles.
Savannah to Macon—Central Railroad	190
Macon to Atlanta—Macon and Western	101
Atlanta to Oothcaloga—Western and Atlaniic	80

Goods will be carried from Savannah to Atlanta and Oothcaloga, at the following rates, viz:

	To Atlanta.	To Oothcaloga.
On Weight Goods—Sugar, Coffee, Liquor, Bagging, Rope, Butter, Cheese, Tobacco, Leather, Hides, Cotton Yarns, Copper, Tin, Bar & Sheet Iron, Hollow Ware & Castings	$0 50	$0 75
Flour, Rice, Bacon in Casks or boxes, Pork, Beef, Fish, Lard, Tallow, Beeswax, Mill Gearing, Pig Iron and Grind Stones	0 50	0 62½
On Measurement Goods—Boxes of Hats, Bonnets and Furniture, per cubic foot	0 20	0 26
Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs and Confectionary, per cubic foot	0 20 pr. 100 lbs.	35
Crockery, per cubic foot	0 15 " "	35
Molasses and Oil, per hhd., (smaller casks in proportion).	9 00	12 50
Ploughs, (large,) Cultivators, Corn Shellers, and Straw Cutters, each	1 25	1 50
Ploughs, (small,) and Wheelbarrows	0 80	1 05
Salt, per Liverpool Sack	0 70	0 95

Passage—Savannah to Atlanta, $10; Children, under 12 years of age, half price, Savannah to Macon, $7.

☞ Goods consigned to the subscriber will be forwarded free of Commissions.

☞ Freight may be paid at Savannah, Atlanta or Oothcaloga.

F. WINTER, *Forwarding Agent, C. R. R.*
Savannah, Aug. 15th, 1846. 1y34

CENTRAL RAILROAD—FROM SAVANnah to Macon. Distance 190 miles.

This Road is open for the transportation of Passengers and Freight. Rates of Passage, $8 00. Freight—

On weight goods generally	50 cts. per hundred.
On measurement goods	13 cts. per cubic ft.
On brls. wet (except molasses and oil)	$1 50 per barrel.
On brls. dry (except lime)	80 cts. per barrel.
On iron in pigs or bars, castings for mills, and unboxed machinery	40 cts. per hundred.
On hhds. and pipes of liquor, not over 120 gallons	$5 00 per hhd.
On molasses and oil	$6 00 per hhd.

Goods addressed to F. WINTER, Agent, forwarded free of commission.

THOMAS PURSE,
y40 Gen'l. Sup't. Transportation.

SOUTH CAROLINA RAILROAD.—A Passenger Train runs daily from Charleston, on the arrival of the boats from Wilmington, N. C., in connection with trains on the Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tuscumbia Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily	$26 50
Fare through from Charleston to Huntsville, Decatur and Tuscumbia	22 00

The South Carolina Railroad Co. engage to receive merchandize consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

1y25 JOHN KING, Jr, *Agent.*

GEORGIA RAILROAD. FROM AUGUSTA to ATLANTA—171 MILES. AND WESTERN AND ATLANTIC RAILROAD FROM ATLANTA TO OOTHCALOGA, 80 MILES.

This Road in connection with the South Carolina Railroad and Western and Atlantic Railroad now forms a continuous line, 388 miles in length, from Charleston to Oothcaloga on the Oostenaula River, in Cass Co., Georgia.

RATES OF FREIGHT.		Between Augusta and Oothcaloga and Dalton. 250 miles.	Between Charleston, Oothcaloga and Dalton. 386 miles.
1st class.	Boxes of Hats, Bonnets, and Furnature, per cubic foot	$0 16	$0 26
2d class.	Boxes and Bales of Dry Goods, Sadlery, Glass, Paints, Drugs and Confectionary, per 100 lbs.	1 00	1 50
3d class.	Sugar, Coffee, Liquor, Bagging, Rope, Cotton Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow Ware, Castings, Crockery, etc.	0 60	0 85
4th class.	Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc	0 45	0 70
	Cotton, per 100 lbs	0 45	0 65
	Molasses, per hogshead	8 50	13 50
	" " barrel	2 00	3 25
	Salt per bushel	0 17	
	Salt per Liverpool sack		95
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows	0 75	1 37

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Co. will be forwarded free of commissions. Freight may be paid at Augusta, Atlanta, or Oothcaloga.

J. EDGAR THOMSON,
Ch. Eng. and Gen. Agent.
Augusta, Sept. 2d, 1846. *44 1y

GREAT SOUTHERN MAIL LINE! VIA Washington city, Richmond, Petersburg, Weldon and Charleston, S. C., direct to New Orleans. The only Line which carries the Great Southern Mail, and Twenty-four Hours in advance of Bay Line, leaving Baltimore same day.

Passengers leaving New York at 4½ P.M., Philadelphia at 10 P.M., and Baltimore at 6½ A.M., proceed without delay at any point, by this line, reaching Richmond in *eleven*, Petersburg in *thirteen and a half hours*, and Charleston, S. C., in *two days* from Baltimore.

Fare from Baltimore to Charleston	$21 00
" " " Richmond	6 60

For Tickets, or further information, apply at the *Southern Ticket Office*, adjoining the *Washington Railroad Office*, Pratt street, Baltimore, to

1y14 STOCTON & FALLS, Agents.

THE WESTERN AND ATLANTIC Railroad.—This Road is now in operation to Oothcaloga, a distance of 80 miles, and connects daily (Sundays excepted) with the Georgia Railroad.

From Kingston, on this road, there is a tri-weekly line of stages, which leave on the arrival of the cars on Tuesday, Thursday and Saturday, for Warrenton, Huntsville, Decatur and Tuscumbia, Alabama, and Memphis, Tennessee.

On the same days, the stages leave Oothcaloga for Chattanooga, Jasper, Murfreesborough, Knoxville and Nashville, Tennessee.

This is the most expeditious route from the east to any of these places.

CHAS. F. M. GARNETT,
Chief Engineer.
Atlanta, Georgia, April 16th, 1846. 1y1

FRANKLIN HOUSE,

No. 105 Chestnut Street, Philadelphia.

The undersigned takes the liberty of calling the attention of the readers of the Journal to the fact that the *Office* is removed from New York to the FRANKLIN HOUSE, *Philadelphia*, where he will be always pleased to *meet* and *greet* them. They will not only find a pleasant *Reading Room*, with lots of *foreign* periodicals, treating of *Railroads* and *Machinery*, but they will always find *good-sized* and *airy* rooms—*clean beds*—and a *well supplied* table. If they would have further proof of this, they have only to call, and judge for themselves, and much oblige the proprietor,

D. K. MINOR.

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This is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

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